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What CONSULTANT Is All About

This is the first issue of CONSULTANT, a monthly medical magazine SK&F is publishing for practicing physicians.

Each issue will contain about ten articles, in ten fields of medicine, written by people (the "Consultants") who have something to say and who say it plainly and concisely. Some of the Consultants will write for just one issue; some will write for several. This time, many of the authors are from near Philadelphia; but as we gain experience, you will see a better geographic balance.

What the Consultants have to say in this and future issues is not likely to be startlingly new, nor highly technical or theoretical. (Incidentally, it is never to be considered an endorsement of our products.) Instead, what they have to say is more likely to be called practical, and, we hope, useful to you. Each article will contain a great deal in small compass. Some articles will be packed with fact; some with opinion—which you (and we) sometimes may not like; some with wit, wisdom, and the distillate of a score of years of work and study. All these good things, I realize, can be said of many medical magazines and journals, but we have high hopes that they will be said of CONSULTANT more often.

There is another feature of CONSULTANT that may commend it to you: Its authors will try to answer any question that you might submit relative to their topics. We will print some of these questions and answers in CONSULTANT in subsequent issues; and the authors will answer the rest by mail. All questions should be addressed to CONSULTANT, Smith Kline & French Laboratories, 1500 Spring Garden Street, Philadelphia 1, Pennsylvania.



Walter A. Munns, President

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April 1961

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INTERNAL MEDICINE



Leonard L. Lovshin, M.D.^{*}
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Leonard L. Lovshin heads the Department of Internal Medicine at the Cleveland Clinic and serves as Chairman, Section on Internal Medicine, for the Ohio State Medical Association. He received his medical training at the University of Wisconsin Medical School, and has since devoted special attention to the clinical problems of headache and psychosomatic disorders. His professional affiliations include the American Association for the Study of Headache and the Academy of Psychosomatic Medicine.

TELL-TALE PHYSICAL SIGNS OF NEUROSIS

While in training, the physician spends almost all of his time learning to diagnose certain well defined organic diseases. When he first begins practicing medicine he finds, to his discomfort, that the majority of his patients are not suffering from organic diseases at all, and he feels ill-equipped to diagnose and treat the large number of emotional ills he must contend with. It is not surprising, then, that the harassed doctor often gives an organic-sounding name to functional states — low blood pressure, low metabolism, change of life, "virus"—and then treats the substitution diagnosis vigorously.

Actually, a functional diagnosis should not be made by exclusion, but by marshalling positive evidence of emotional instability. There are many physical evidences of functional disease which can

easily be observed during the course of physical examination.

Skin and Appendages

Blushing, flushing of the neck, dermographism, patches of neurodermatitis, and cold feet are signs of emotional lability. Chronic urticaria frequently is due to functional causes, although the exact mechanism is not known. Neurotic excoriations indicate a *very* nervous patient, and the presence of factitial lesions calls for psychiatric help.

Excessive perspiration of the hands, feet, axillae and forehead is seen commonly in tense and anxious patients. It is difficult to determine exactly how much perspiration is significant, but a positive "Puddle Sign" indicates an abnormal amount. This sign is present when large

wet spots are left on the sheet covering the examining table — the puddles corresponding to the position of each axilla.

The care and management of head and body hair tells a great deal about the personality of the patient. The coloring and tinting of a woman's hair, in itself, means little. However, extreme examples with theatrical effect tell a lot. For some reason, flashy, artificially colored platinum blond hair is often affected by neurotic women. An old lady who finds it necessary to color her fading gray hair jet black is also suspect. Over-plucked and painted eyebrows is another common and dependable sign of emotional trouble; such a maneuver is permissible in a model or show girl, but not in a secretary or housewife. Women usually shave axillary hair; men seldom do. A male with shaved axillary hair need not be regarded as abnormal, though he is in the minority, but a man who removes leg or body hair is quite definitely unusual. Some obsessive males shave the hair on the chest because it is "dirty."

One of the most significant signs of neurosis, though it is not common, is that of shaved-off pubic hair. Observation of some 30 patients, including both sexes, has led to the conclusion that (barring preparation for surgery, therapy for parasites, or occupational necessity) a shaved pubic area invariably indicates neurosis, and a severe one at that.

Eyes, Mouth and Throat

The wearing of dark glasses when the sun is not out — especially if the day be dark and gloomy — is a custom commonly indulged in by highly emotional people. The wearing of tinted lenses in ordinary eyeglasses has a similar connotation. Since it is exceedingly difficult to satisfy

a tense, high-strung, worrisome person when fitting glasses, the harried ophthalmologist who knows the prescription has been right all along, sometimes, in desperation, adds a tint to the lenses and the patient is somewhat happier.

Widely dilated pupils in the presence of adequate light is due to over-stimulation of the sympathetic portion of the autonomic nervous system. This finding — a positive "Owl-Eye Sign" — is often seen in attractive, nervous young girls. Emotion as well as belladonna can beautify the eyes. Tics and twitches about the eyes are often seen in nervous patients. Fluttering of the eyelids is an important sign seen in only one type of functional disease — hysteria.

A common finding in the nervous person is a quivering and twitching about the mouth and chin, often associated with a tremor in the voice. A whining or weepy voice betrays emotional discontent. A positive "Bad Teeth Sign" in a person financially able to go to a dentist usually means that he is afraid to do so, and therefore indicates a highly nervous disposition. An adult patient who is unable to swallow a pill merely advertises his sensitive emotional makeup to his physician and others.

Chest and Abdomen

There is no organic disease which could possibly cause a sighing type of respiration; sighing is produced by carrying the weight of the world on one's shoulders. Multiple scars on the abdomen do not have to mean that a neurosis is present, but it is surprising how often this turns out to be true. Aerophagia with resultant loud belching is always due to functional causes. The abdominal hyperreactor — the patient who is sensitive to light palpation all over the abdomen — is usually

not seriously ill, and the most experienced surgeons agree that a ticklish abdomen seldom, if ever, is harboring evil.

It is generally known that rectal and pelvic examinations are not particularly pleasant for the patient, but it is also well known that these examinations are not very painful. Thus, when in the absence of any organic disease, a pelvic or rectal examination is so "painful" that it cannot be tolerated, much is learned about the patient's nervous sensitivity and pain threshold.

These are only a few of the many objective signs of functional disease; it is not only unnecessary to make a diagnosis of functional disease by exclusion alone, it is dangerous. It should be emphasized that none of these signs is infallible, and the discerning physician should try to visualize the total picture by fitting each observation into place and assessing the value of each in relation to the whole. The wisest physician and most accurate diagnostician is the one who uses plenty of common sense, and who is sensitive, high-strung and nervous himself!

QUESTIONS AND ANSWERS

Q. When you make a diagnosis of functional disease how can you be sure you haven't missed some organic condition? I can remember a few cases diagnosed as functional disease that later died of cancer.

A. You can't be sure, but you can be pretty sure. All conscientious physicians worry about missing a diagnosis. However, more suffering and sorrow is being caused today by over-diagnosing organic disease than underdiagnosing it. Which is the bigger sin — misdiagnosing carcinoma of the pancreas in which the prognosis is usually hopeless from the beginning, or removing ovaries from a young woman who has no real pelvic disease?

Q. Should you not exclude organic disease by laboratory examinations and x-ray even though you know the patient is nervous?

A. Certainly, every patient deserves a careful physical examination and each major complaint must be in-

vestigated as thoroughly as possible. It is impossible to really reassure a nervous patient unless a thorough investigation is done first. One should not, however, blame major symptoms on very minor objective findings—in other words, a little bit of osteoarthritis could not possibly cause a patient to be weak, tired, and sick all over.

Q. Isn't the history more important than the physical examination in diagnosing functional as well as organic disease?

A. Yes, the taking of a good history is crucial. Most neurotic patients have a long history of emotional instability, maladjustment, and a series of one terrible-sounding illness after another. However, much can also be learned during a physical examination. The physical signs of functional disease have largely been overlooked; our physical diagnosis texts refer only to findings in organic disease.

DERMATOLOGY



**Donald M. Pillsbury, M.D.
University of Pennsylvania**

Donald M. Pillsbury heads the Department of Dermatology and Syphilology at the University of Pennsylvania School of Medicine. He serves as consultant for the Surgeon General's Office of the Army, U.S. Public Health Service, and Air Force. He is president of the XII International Congress of Dermatology, and past president of the American Academy of Dermatology and Syphilology and the American Board of Dermatology and Syphilology. As Director of the Commission on Cutaneous Diseases, he recently supervised the preparation of the official statement on griseofulvin for the Armed Forces Epidemiological Board.

SUCCESS AND FAILURE WITH GRISEOFULVIN

The fungal antibiotic griseofulvin, first reported on by Blank, and by Williams, in December, 1958, has by now been used widely enough to permit a reasonably final conclusion about two things: its efficacy in various types of superficial ringworm infection, and its toxicity, including the more obscure drug reactions that usually don't crop up until a new compound has been used in many hundreds, sometimes many thousands, of patients.

Griseofulvin is a remarkable drug in several ways, not the least of which is the way in which it remained unappreciated on laboratory shelves for almost twenty years. It is the first systemically administered drug with undoubted curative effects upon superficial ringworm infections. It is highly active against all known species of *Trichophyton*, *Micro-*

sporon, and *Epidermophyton*, and bids fair to eliminate ringworm of the scalp. And it is an uncommonly safe drug. On the other hand, it is not effective against *Candida albicans*, nor against the organisms causing tinea versicolor or erythrasma. Nor is it useful in any of the deep fungal infections like blastomycosis, histoplasmosis, coccidioidomycosis, etc. And it does have some side effects, one of them very rare, and presumably not serious, but odd and quite inexplicable.

Where Griseofulvin is Useful

Its consistent effectiveness in ringworm of the scalp (*tinea capitis*) is probably griseofulvin's best feature — the inflammatory and noninflammatory ringworm seen in children, the very chronic dry endothrix ringworm seen in Mexico and

in the southwest, all types. To cure ringworm of the scalp without griseofulvin, one has to wait for the inflammatory reaction to develop sufficiently to cast off the infected hairs, or else epilate the hair with x-rays, which is not without risk. With griseofulvin, one can usually expect a cure after a single dose of 2 to 5 grams, and this is a great boon to parents because it eliminates the struggle that usually goes with the daily administration of drugs to young children. After two weeks, it's a good idea to give the child a fairly close haircut, to get rid of the reservoir of infected material. Then, if there is still evidence of the disease, either grossly or under the Wood's light, another single large dose may be given, or daily administration continued for two to three weeks.

Apparently griseofulvin works so well in tinea capitis because it is deposited in high concentration on the hair shaft as it grows. And, since the hair grows quite rapidly, a fairly wide band is deposited. This band prevents further progression of the mycelial elements from the distal portion of the hair toward the portion above the root, and the fungi are soon cast off.

In fungal infections of the body (tinea corporis), too, griseofulvin is rapidly effective, unless there's an underlying systemic disease, like diabetes or lymphomas, that makes the patient particularly susceptible. Under such circumstances repeated courses of the drug may be required.

In tinea cruris — ringworm of the anogenital region—however, the story is not quite so straightforward. For one thing the infection may not be caused by tinea cruris at all; it might be erythras-

mas but by an organism not sensitive to griseofulvin; or the inflammatory condition may be seborrheic dermatitis or psoriasis. And there's a good chance that there will be secondary conditions that complicate treatment, like miliaria due to blockage of sweat ducts, or scratch dermatitis, or reactions to applied medicaments. Despite these complications, though, treatment of tinea cruris with griseofulvin is usually short — two to three weeks, 1 gram daily.

It's effective in ringworm infections of the feet, too — either the moist soggy type between the toes, or the drier, more extensive type caused by tinea rubrum; but it's very slow to work in ringworm of the nails, especially the toenails. The drug is deposited in the keratinous structure of the nail plate as it is formed, and a continuous source must be provided until the nail has grown out fully, which as you know takes a long time — four months for fingernails, six to twelve for toenails. This means 1 gram of griseofulvin daily during all of those months, so unless the infection is truly bothersome, griseofulvin is probably not worthwhile here.

How Safe is the Drug?

It's risky, I know, to assess the ultimate toxicity of a new drug only a year or so after it has come into general use, but I must say that griseofulvin is remarkably safe. Its true toxic effects in massive doses are considerably less than those of aspirin, and its side effects hardly more significant. There has been no indication yet of sensitivity, the *bête noire* of so many valuable agents. It does cause some mild gastrointestinal distress, some loose stools and headache, and some urticaria. And others have seen an erythematous morbilliform

eruption on occasion, although I have not in several hundred patients treated.

The odd reaction I mentioned earlier, and apparently it is extremely rare, is an ill defined deliberateness and slowing of reaction time in the performance of routine familiar movements. It was first noticed in an experienced jet pilot, and for this reason it has been prohibited among operational personnel on active duty. Walter Shelley and I saw the same thing in a patient whose wife noted this

odd slowness when he carried out the simple coordinated movements of starting his automobile. The effect disappeared when the dose was reduced from two to one gram daily, but reappeared when the dose was increased.

There seems no point in routine blood counts or urinalyses, because large scale studies of nephrotoxic, hepatotoxic, or hematologic effects have yielded negative results.

QUESTIONS AND ANSWERS

- Q.** You mention that griseofulvin won't help in erythrasma. How can you tell erythrasma or other anogenital inflammations from ringworm?
- A.** First of all, tinea cruris is primarily a disease of adult males; it is usually an annular lesion spreading from the crural folds of perineum over the upper inner thigh, with slight to moderate inflammation. The buttocks are sometimes involved, but the region at the anal orifice is usually exempt. Erythrasma is easy to confuse with ringworm, but is usually brownish, and there is relatively little inflammation. If the involvement is strictly confined to folds such as those in the crural region or the gluteal cleft, it is more likely a seborrheic dermatitis or a candida infection than ringworm. Psoriasis usually involves the anogenital region sometimes in the form of marginated plaques in moist folds or as a scattered guttate and plaque lesions.

- Q.** Last month I treated a 10-year old boy with griseofulvin, 500 mg, b.i.d., for two weeks for what I thought was ringworm of the feet. I did not

have much success; in fact, he developed what looked like an acute flare-up of athlete's foot.

- A.** Perhaps this wasn't ringworm, or perhaps there were secondary factors operating. In inflammatory eruptions of the feet, the existence of a fungal infection should be clearly established, preferably by direct examination of the scales in potassium hydroxide solution or by cultures. The latter is easier said than done, being unavailable in some laboratories; and besides, it may prove difficult to grow out the fungus even though it's there. You've got to keep in mind that fungal infections, although they are a significant cause of inflammatory eruptions of the feet, are not the most common cause. Also, fungal infections of the feet are rare in children, and relatively uncommon in adult females. Griseofulvin is not of value in acute vesiculo-bullous flare-ups of athlete's foot. This is an allergic reaction—like poison ivy dermatitis—where the epidermis is reacting to the presence of fungi, and is casting them off at a rapid rate.

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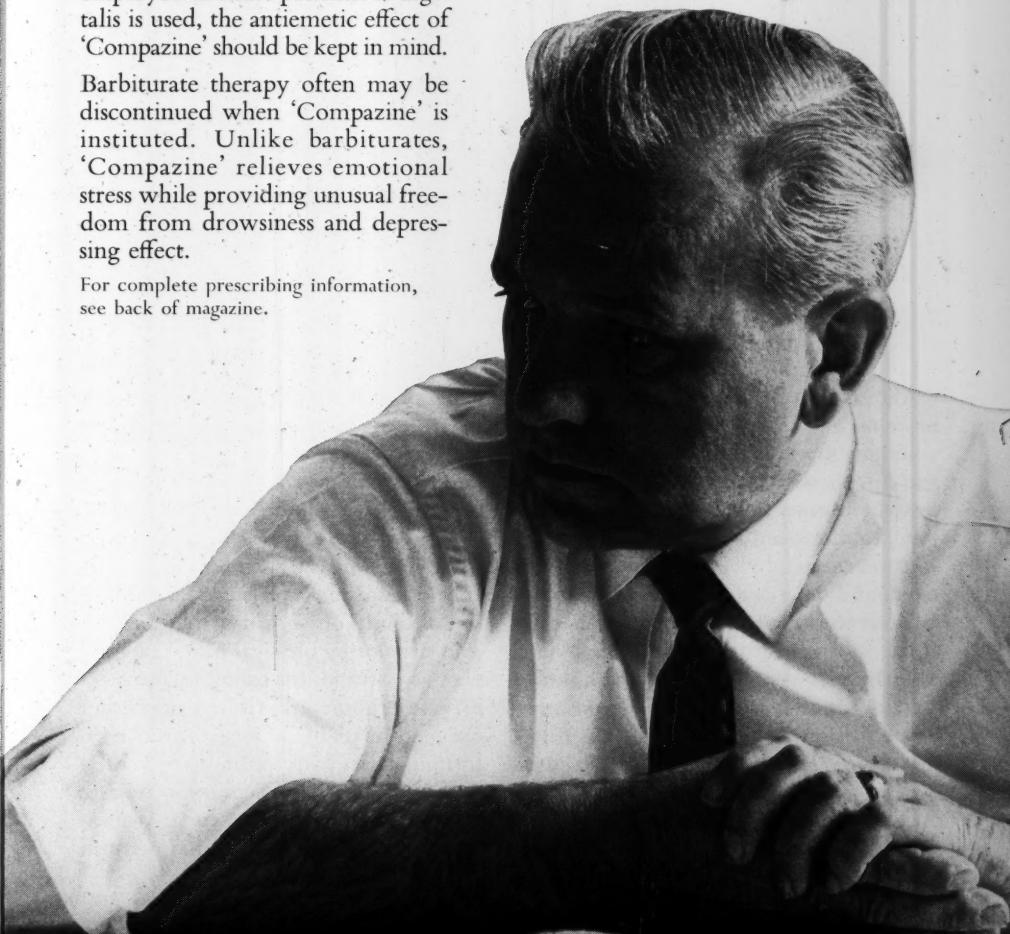
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GERIATRICS



**Edward L. Bortz, M.D.
Lankenau Hospital, Philadelphia**

Since 1932 Edward L. Bortz has been Chief of the Medical Service Staff "B" at the Lankenau Hospital, Philadelphia. He is assistant editor of THE CYCLOPEDIA OF MEDICINE, SURGERY AND SPECIALTIES, and author of the text, DIABETES CONTROL. Doctor Bortz was president of the American Medical Association during 1947-1948. He is president of the American Geriatrics Society and a member of the AMA Committee on Aging. A delegate to the recent White House Conference on Aging, he is also a frequent contributor to the literature on geriatrics, metabolism and nutrition.

THE GREATEST PROBLEM IN PATIENTS OVER 60

"What is the most difficult problem in managing patients over 60?" This is a challenging question because it could have so many possible answers. Treating cardiovascular disease, for example. Or, more taxing: managing elderly patients who have irreversible pathology, whose life's purposes are far spent, who have lost the ability to think clearly and to carry on the usual activities of daily living—the victims of far advanced physical or mental deterioration—those patients who are living at the tragic, precentenary level. But, instead of chronic or incurable illness, where treatment is standardized or limited to hope, I believe my answer would be this: *overcoming apathy in relatively healthy older people.*

Apathy is the major curse of old age, and it affects many of our over-60 popu-

lation. It may lead to faulty eating habits, sluggish elimination, lack of exercise—and in turn be perpetuated by these conditions. It is responsible for many nuisance complaints that the physician hears from elderly persons; it is the partner of old-age fatigue. More important, it may accelerate deterioration and hasten natural death.

Experimentally, we know the importance of continued physical activity and its concomitants—proper diet and rest—in promoting physical fitness of aging people. Åstrand, for example, using the bicycle ergometer, studied maximum oxygen intake, blood lactic acid concentration, heart rate, pulmonary ventilation, and electrocardiographic tracings in men ranging from 25 to 70 years of age. These studies showed that perform-

ance capacity decreases with advancing age — but that training can improve performance in older bodies, just as in younger ones. Observations on the effect of diet, exercise, and rest have shown that the vascular wall can be protected against premature degeneration by limitation of caloric intake, the use of non-esterified fatty acids in the diet, adequate proteins, minerals, and liquids. Persons who exercise are less prone to show deterioration of endothelial cells than those addicted to sedentary living. Similarly, inactivity of the elderly invites thinning of the bones, i.e., osteoporosis, and in many instances this deprivation can be delayed by adequate diet and exercise.

Experimentally, we know the value of exercise of mind and body as a deterrent to aging. Clinically, we know that when an individual settles down, he may invite and even accelerate decay. The human body is designed for *performance*. When the organs, tissues, and particularly the muscles of the body are not used and allowed to become flabby, they weaken the entire body. In other words, when an individual retires out of life, life tends to retire out of him. Lack of motivation invites weariness, boredom and premature death.

Motivation the Key to Effective Aging

We all know why older people tend to lose their motivation. Most who work are forced to retire at age 60 or 65, regardless of physical ability and mental acuity. All live in a youth-oriented society, where old age seems synonymous with worthlessness. Then, too, because of their age, many are segregated from family and community activities, so that they are no longer needed.

These sound like sociological problems, and they are. But they are also important to the physician in understanding why his aging patients become preoccupied with themselves, tend to develop complaints of chronic fatigue, and tend to become dependent on him.

You, the physician, may be the old person's strongest link to life. What can you do to help in overcoming boredom and aimless living, to help in instilling strong motivation? Here are some ways I have found effective:

1. Survey the patient's background to discover interests which motivated him in earlier adult years. Explore possibilities for a second career, or a productive hobby, or some community service which can give him a renewed sense of importance.

2. Discourage retirement whenever possible. Whenever a healthy individual is faced with compulsory retirement, try to instill the idea that he must find new activities, not consider retirement a time for perpetual leisure.

3. Explore hobbies which may lead to a second career. One of my patients, a distinguished educator in his early 80's, had little time while engaged as an administrative educator to enjoy his interest in antique furniture. When he was released from his duties, he immediately plunged into the fascinating realm of antiques. His wife, his partner of more than fifty years, followed his interest and, in a short time, became so versed in the details that she is now lecturing before women's clubs. Both, because of their joint hobby, are too busy and too active to worry about growing old.

4. Strive to overcome futility and undue fear of over-exertion in pa-

tients who suffer serious acute illness such as a heart attack or stroke. Many such patients have failed to recover fully — and lost their motivation — because they were told their "working days are over," and see *no need for recovering*.

5. Survey the family, the home ties. There is always some way the older person can play a more important role

and make a significant contribution to the life of his family.

The science of medicine has stretched the average span of human life — and in doing so has created a need: we physicians must now apply the *art* of medicine to help make the added years more purposeful for our older citizens.

QUESTIONS AND ANSWERS

Q. *How often do you do routine check-ups on elderly individuals? Do all check-ups include a complete physical examination?*

A. Older patients without unusual pathology should have complete physical check-ups and discuss their problems about every six months.

Q. *How much sleep, on an average, does a person past 60 require?*

A. The better a person's physical condition, the less sleep he requires. It is a good idea, however, for older persons to take a rest period at midday, although it doesn't really matter whether rest is taken in several periods daily or in one long period. A more important factor is establishing a constant rhythm of sleep and, at all costs, avoiding excessive fatigue.

Q. *When a patient with vague aches and pains that cannot be traced physically expects you to prescribe medication, do you ever order*

placebo, aspirin or vitamins?

A. Before prescribing any sort of medication, a careful examination of the patient's physical condition and other problems must be done to rule out serious organic disorder. After this, it may, under certain circumstances, be advisable to prescribe some mild form of non-specific medication, mainly for its psychological benefit. A more useful step, though, is to seek ways to stimulate the patient to more exercise of his body and mind; inactivity is the greatest cause of vague "aches and pains" in the elderly.

Q. *What kinds of activities do you recommend for an apathetic older person who has a cardiac condition?*

A. The kind of activities, of course, depend entirely upon the severity of the condition. Music, art, floriculture and reading are always desirable fields of interest. For my ambulatory patients I always say "Get a dog" (for obvious reasons).

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Prescribing information adopted January, 1961



GASTROENTEROLOGY



James L. A. Roth, M.D., Ph. D.
University of Pennsylvania

James L. A. Roth is Professor of Clinical Gastroenterology at the Graduate School of Medicine, University of Pennsylvania. He is director of gastrointestinal research, and Chief of the Gastrointestinal Clinic at the Graduate Hospital, the University of Pennsylvania. Since 1958 Dr. Roth has been Secretary-General of the Bockus Alumni International Society of Gastroenterology. Author of over 60 publications on original research, he has also written 15 chapters in various books on gastroenterology and serves on the Editorial Board of *GASTROENTEROLOGY*.

PSEUDO-ANGINA DUE TO EXCESSIVE AIR-SWALLOWING

Excessive swallowing of air, or aerophagia, is the most common cause of functional gastrointestinal disorders, yet its clinical importance is not widely appreciated. Air-swallowing is universal; all of us swallow some air when we eat or drink, swallow saliva, or when we hypersalivate from chewing gum and smoking. Some of the air may be eructated and that which remains passes on through the gastrointestinal tract. In certain patients, however, particularly in tense individuals during periods of excitement or anxiety, the amount of air swallowed may be excessive and its accumulation may lead to distressing symptoms that closely mimic organic disease.

Perhaps the most important of these is *pseudo-angina* resulting from the "magenblase syndrome," air trapped in the

stomach. The diagnosis may be difficult and confusing because the same patient may have angina due to the magenblase superimposed on true angina pectoris, each one making the other worse. However, there are ways to distinguish between the two.

Nature of Symptoms

In this form of pseudo-angina, the trapped air bubble stretches the stomach so as to refer distress to the precordial area. The patient will complain of an aching discomfort or a sharp, stabbing pain at the left rib margin, sometimes extending to the left pectoral area and less frequently to the left side of the neck, shoulder, or arm. Some patients will also experience shortness of breath, palpitation, and a sense of suffocation. During a particularly tense or exciting

day, the patient is likely to swallow even more air than usual, and, as a result, his angina-like pain will be more intense. Eating or drinking rapidly may also increase the severity of his symptoms, not only because of the extra air swallowed but also because there will be insufficient time for the stomach to accommodate its increased content.

Usually, in fact, the excessive amount of air in the stomach does not make its presence felt until after a large meal, or until the patient compresses his upper abdomen by sitting or bending. Frequently, of course, he does both: he eats a large evening meal, then slumps into an easy chair before the TV set. Naturally he blames the food for his "indigestion" and usually tries to relieve his sense of fullness by belching. Sometimes he is successful. But, often, because of hypertonicity at the esophago-gastric junction or because of the cascade configuration of the stomach, his attempts to induce a "burp" by gulping air into the stomach will only increase the size of the magenblase. (Postoperatively, excessive air-swallowing may not only participate in the pathogenesis of acute gastric dilatation, but irritation of the diaphragm by the overly distended stomach is one of the most common causes of hiccups. Under these postoperative circumstances, nasogastric intubation for decompression of the stomach is frequently necessary, and reassurance and profound sedation may be required to prevent continued aerophagia.) Oddly enough, in some individuals, particularly those who are sensitive or anxious, the symptoms caused by overdistention of the stomach or splenic flexure of the colon may be felt more keenly than the vague discomfort of angina pectoris, hiatal hernia, cholelithiasis, or peptic ulcer. As a consequence, a super-

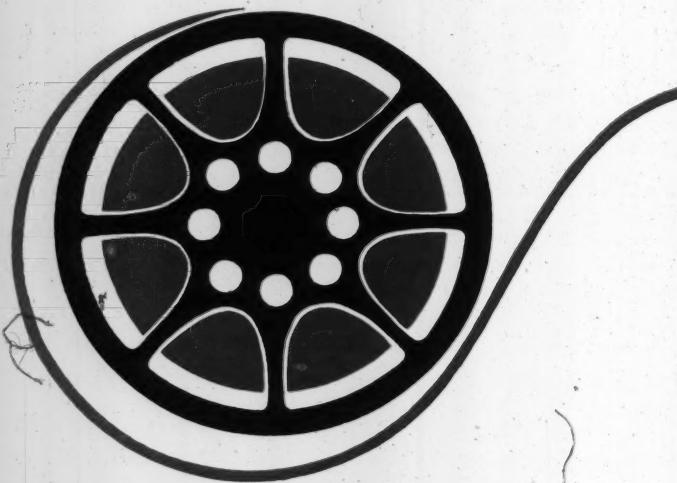
imposed magenblase syndrome may delay the recognition of significant, underlying organic pathology until a complication occurs. These anginoid attacks provoke anxiety in the patient about coronary heart disease, and he usually consults the cardiologist first. True angina pectoris also often follows emotional upset or a heavy meal, and may be further confused with aerophagic pseudo-angina because the patient is unable to adequately describe his symptoms, or because they are located atypically. *As a rule, however, the discomfort of aerophagic pseudo-angina is located to the left of the midline, not mid-substernally as in true angina.*

Possible Mechanisms Involved

There are a number of ways in which the enlarged magenblase might cause angina-like pain. The pressure against the diaphragm by gas trapped in the stomach or splenic flexure may stimulate phrenic nerve endings causing a typical "phrenic reflex" which may not be differentiated easily from the referred pain of cardiac origin. In the patient who has angina pectoris or other heart disease, the pressure of excessive amounts of air in the stomach may intensify symptoms that are already present, or may even cause actual cardiac pain. Distention of the stomach with food or swallowed air will increase blood flow to the digestive tract, thus decreasing post-prandial coronary blood flow. Epinephrine, released by pseudo-anginoid pain, may also increase cardiac work, or pressure of a markedly distended stomach on the inferior vena cava may decrease the return flow of blood to the heart. As a consequence, the patient with coronary artery disease may experience true anginal pain. Acute gastric dilatation caused by aerophagia has also been

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known to bring on cardiac arrhythmias, and, although it is rare, the pressure of excess air in the stomach can precipitate paroxysmal dyspnea by elevating the heart, kinking the arch of the aorta.

Because aerophagia may precipitate or aggravate true angina, the magenblase-angina problem is probably the most confusing when aerophagic pseudo-angina is superimposed on angina pectoris. The angina patient, anxious about his condition, is likely to swallow air excessively or accumulate a large magenblase. If he experiences his pseudo-angina, he naturally becomes more anxious and upset. Belching may bring relief from post-prandial angina and so cause the patient to deliberately swallow air during an attack in an attempt to induce belching for further relief. However, gulping the air increases the magenblase and reduces coronary blood flow.

Thus, his emotional reaction causes him to do the very thing that aggravates coronary insufficiency; in effect, his anxiety perpetuates a vicious cycle (Figure 1).

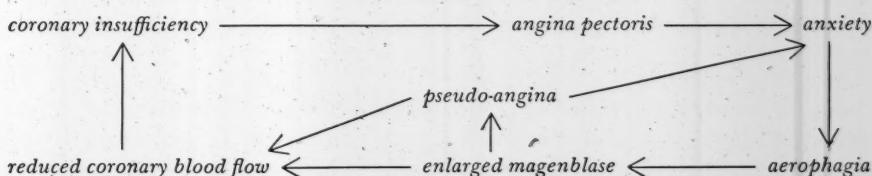
Diagnosis

Before arriving at a diagnosis of aerophagic pseudo-angina, the co-existence of primary organic disease should be excluded by appropriate objective studies. *Organic diseases* such as hiatal hernia, peptic ulcer, or cholelithiasis, which may provoke air swallowing, and become masked by superimposed gaseousness, should be recognized. If the

patient has the usual symptoms of the magenblase syndrome — the epigastric bloating, pressure or fullness, an aching or jabbing pain in the left pectoral region — the diagnosis may be substantiated by asking him what aggravates and what relieves his discomfort. Thus, aerophagia is a likely cause of symptoms if he says that the pain increases when he crowds the upper abdomen (by bending, slumping, wearing a tight belt, or eating large meals), and that he can relieve pain by decompressing the abdomen (by belching, passing flatus, or relaxing the abdominal wall by local application of heat). The diagnosis should be further suspected if the various factors contributing to excessive air swallowing are present, such as eating fast, excessive smoking, sucking of mints or chewing gum, as well as underlying tension or anxiety.

During the interview or physical examination, one can often observe frequent swallowing in the aerophagic patient, and can demonstrate a large area of tympany overlying the magenblase in the epigastrium. The alerted fluoroscopist may actually see excessive swallowing of air (the speed with which a large magenblase can accumulate is impressive) and sometimes he may see the patient relieve the magenblase by eructation of air. X-ray films may reveal a large collection of air in the stomach, especially if it has been trapped by the cascading configuration. On the other hand, a magenblase cannot be excluded

Figure 1.



as the basis of symptoms just because the x-ray examination does not show it. The examination may have been made in the morning, for instance, when air has not accumulated to any great extent, or the patient may experience symptoms from a small amount of air under a high degree of gastrointestinal tone. To establish the diagnosis convincingly in difficult cases, it may be necessary to reproduce symptoms by suddenly stretching the stomach with air pumped in by way of a tube.

Management

Successful management of the aerophagic patient, as in any functional disorder, depends in part on the manner in which the diagnosis is established. Since he is convinced he has an organic disease, the examinations performed to exclude this possibility can reassure the patient and thus allay his anxiety.

Once the diagnosis is established, however, it is unwise to suggest that the patient's symptoms are "just caused by nerves," because these symptoms, after all, are real, not imaginary. In effect, he has a disorder of function, and is entitled to a full and sympathetic explanation of the causes of his distress. Focusing attention on the act of swallowing increases its frequency and, therefore, attention should be directed to eliminating the causes of aerophagia.

Generally, I find it helpful to compare his condition with other more obvious functional disorders, to explain how anxiety and tension can contribute to his symptoms, so that he can understand how to help himself get well. Ideally, of course, the patient's tension and anxiety should be resolved, but anxiety is a part of life and the patient will most likely have to learn to live with at least some

of his symptoms. When symptoms are severe, mild sedation, rest, or a vacation may help him handle his tension.

I try to persuade the patient to make a real effort to break the habits that cause him to swallow too much air, even though I realize that this is easier said than done. I tell him to chew food slowly, to eat slowly and to avoid heavy meals, especially in the evening. He is instructed to avoid emotionally disturbing conversation during the mealtime; to omit water with the meals since it will only crowd the stomach; to reduce smoking and to stop sucking on mints and chewing gum, since they stimulate the flow of saliva and induce swallowing; and to avoid gas-producing foods, such as beans, Brussel sprouts, cabbage, cauliflower, broccoli, cucumbers, radishes, onions — and carbonated beverages. Moreover, he is cautioned not to wear a tight belt, or to lie down or sit in a slumped position immediately after eating. If he can follow this advice, or most of it, his symptoms will gradually disappear.

With severe distress, the following procedures may bring relief: walking, gently massaging the abdomen, assuming the knee-chest position, or as a last resort, a pint-sized lukewarm enema. Applying heat is often helpful, particularly if symptoms are mild. A hot water bottle or electric pad, or even soaking in a warm bath, will relax the patient and the abdominal musculature.

The causes of pseudo-angina are multiple and the problem of pseudo-angina due to excessive air-swallowing is far more complex than can be presented in this brief orientation to the subject. As in any functional disorder, the patient as a whole must be treated with both sympathy and intelligent understanding.

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OBSTETRICS/GYNECOLOGY



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Edward T. Tyler is on the faculty of the Departments of Medicine and Obstetrics and Gynecology at U.C.L.A. and is chairman of the Post-Graduate Extension Infertility Course at the U.C.L.A. Medical Center. He is president of the Pacific Coast Fertility Society, president and medical director of the Los Angeles Planned Parenthood Clinic, and member of the board of directors of the Planned Parenthood Federation of America. His studies of infertility at the Tyler Clinic have resulted in a number of publications, including a recently published book, *STERILITY: OFFICE MANAGEMENT OF THE INFERTILE COUPLE* (McGraw-Hill).

PITFALLS IN DIAGNOSING INFERTILITY

Infertility ranks high on the list of major medical problems because of its frequency and its profound effect on the lives of the couples involved. It is unusual among pathological conditions in that the possible causes are many; it is also unique in that these causes, frequently multiple, may exist in two individuals to produce a single clinical problem. Therefore, diagnosis is often a fascinating puzzle fraught with possibilities for error. I would like to discuss several such errors—errors noted in the treatment of patients before they were referred to me and errors which my own experience has led me to try to avoid.

The first pitfall is fundamental: failure to perform the basic diagnostic

studies in logical sequence. The yearning for children is so strong that most barren couples will accept any inconvenience or expense to achieve fertility. If we must subject them to prolonged inconvenience, certainly the procedures should be planned as efficiently as possible. Therefore, it is important to try to do the simpler procedures first—those which yield the most information with the least expenditure of time—hoping that the more costly and complicated procedures will prove unnecessary. For instance, the first step in diagnosis, the personal history, may be the greatest time-saver of all. Questions asked gently by an understanding family physician may uncover factors, occasionally even as simple as faulty sexual technique, that

make all the laboratory tests superfluous.

Next comes a general physical examination of the wife, to exclude constitutional defects. A pelvic examination to exclude such gross abnormalities as tumors, inflammatory disease, and congenital malformations completes the first visit and rules out the most obvious female deficiencies.

Avoidance of a second error has become easier since more open discussion of these subjects has acquainted the public with the husband's role in the barren marriage. As a result of this new awareness, I find it an increasingly common occurrence for the husband to make the first visit to our clinic. Often — and, of course, preferably — the husband and wife appear together. Yet the wife is still too frequently subjected to extensive studies before attention is paid to the husband's status. This is a mistake because the male is responsible in some degree in as high as 40% of all infertile couples and because male fertility can be estimated with relative ease. Therefore, unless some obvious etiological factor is immediately apparent in the wife, no involved study should be made of her until the husband is examined.

Sources of Errors in Semen Analysis

Semen analysis, the first step in evaluating the husband's fertility, may be invalidated by improper collection of samples. Intercourse using a condom is not an acceptable method because certain ingredients of the condom are damaging to the sperm, even after brief contact. Furthermore the specimen should never be refrigerated before delivery to the laboratory if complete analysis is to be done. I have seen many patients with normally motile semen who have been told that their spermatozoa were com-

pletely inactive; on questioning I learned that the previous specimens were collected in a condom or stored in a refrigerator. We generally instruct our patients to collect the sample in a clean glass jar for observation in the laboratory as soon as possible, preferably within one hour. Also, I believe that specimens should be collected at intervals which approximate the intervals between coitus as customarily practiced by the couple near the fertile time of the cycle. I cannot agree with those who advise a long period of continence before taking samples, for this may produce a different concentration of spermatozoa than is normally present in the semen during periods of more frequent coitus near ovulation.

Pitfalls in interpreting the semen analysis are numerous. My observations have, over the years, led me to continuously revise my opinion as to the quality of specimens capable of producing conception. However, there is agreement on normal, if not minimum, values: a sperm count of greater than 40 million per cc., good motility in 80% of the sperm during the first hour after ejaculation (decreasing about 10% per hour thereafter), and normal morphology in 85% of all sperm. Keep in mind that a low sperm count (oligospermia) may be temporary — the result of recent infectious diseases associated with fever or repeated prior intercourse; therefore, more than one test should be done. Consultation with a urologist will probably be required to determine the cause of persistent severe oligospermia or azoospermia. Most such cases, unfortunately, appear to result from congenital, uncorrectable defects.

If the husband proves relatively fertile, attention now turns to the wife; if he is

not, further study of the wife should be delayed until attempts have been made to improve the husband's condition. The foregoing alternatives are not necessarily clear-cut, however. Forgetting that fertility is a relative matter is a common source of error. We all know that conception may readily result from sub-normal semen when the wife is highly fertile but fail to occur if the wife is also somehow deficient. Hence we must be on the lookout for a deficiency in the wife of a sub-fertile man which might be unimportant in the wife of a highly fertile man. While examining the husband, I usually ask the wife to begin recording her basal body temperatures to obtain data on the approximate time of ovulation and the nature of the menstrual cycle. Temperatures, preferably oral, are recorded before arising in the morning. Readings must be taken in the same way and at approximately the same time each day before any activity.

Early Steps in Testing the Wife

A logical early test of the wife's fertility is the Hühner or Sims post-coital test to determine whether spermatozoa are surviving adequately after intercourse. Within 24 hours after intercourse, at a time near ovulation, a specimen of cervical secretion is obtained. It is imperative that this test be performed near ovulation for only then is the cervical mucus of the quality that will maintain sperm motility. If fewer than 25 to 75 actively motile sperm per high power field are reported, it is possible that the cervical mucus is pathological, perhaps due to cervical infection. Cultures of the secretions may identify the etiologic organisms.

Carbon dioxide insufflation is a simple

method of determining the patency of the fallopian tubes, obviously a prerequisite to conception. Tubal patency is shown by normal passage of CO₂ as indicated by manometer and confirmed by auscultation and/or referred pain in the shoulder. However, errors in interpretation of this basic test are common. First, we must remember that the fallopian tubes may be sufficiently patent to permit the passage of carbon dioxide but not adequately functional to permit the passage of the ovum, the largest cell in the body. Secondly, one negative test does not mean the tubes are permanently occluded, for the procedure may cause undue stimulation, resulting in spasm of the tubes and simulating non-patency.

Failure of ovulation (not necessarily associated with amenorrhea) can usually be diagnosed by a variety of methods including endometrial biopsy. Although treatment of anovulation does not come within the scope of this paper, one should be aware of a therapeutic pitfall. Spontaneous "cure" may frequently occur. Therefore, radiation treatment of the pituitary and, particularly, ovaries for the purpose of stimulating ovulation should be used only as a last resort, if at all, in view of the genetic damage that may occur as a result of even low-dosage radiation.

While reviewing some of the more frequently encountered pitfalls in the diagnosis of sterility, I have tried to mention, in sequence, some diagnostic procedures which might be used in general practice. Avoiding these pitfalls and employing these procedures should allow you to arrive at a logical program for the therapeutic management of many infertile couples.

QUESTIONS AND ANSWERS

Q. *What are the clinical criteria for "infertility" which justify beginning a program of study?*

A. Usually we arbitrarily classify as infertile all couples who have practiced unprotected intercourse for a period of at least one year without pregnancy. Numerous studies have indicated that, without contraception, pregnancy will occur within one year in 90% of all couples of child-bearing age.

Q. *How do you manage the husband who is reluctant to submit to fertility evaluation?*

A. The cooperation of the husband is always desirable and often essential to successful management of infertility. Often you can avoid wounding the ego of either husband or wife if you avoid the words "blame" or "fault" in discussing fertility. Self-guilt serves no useful purpose and the doctor should object whenever it is expressed. At the onset, the couple should be told that the causes are usually multiple and the treatment may involve both man and wife.

Q. *What procedure is followed when semen analysis indicates azoospermia?*

A. Assuming the condition is confirmed by repeated analyses, further tests are indicated. Sperm will be completely absent if none is produced or if some obstruction exists in the seminal vesicles. The former condition can be diagnosed by testicular

biopsy; the latter by seminal vesiculography.

Q. *Are basal body temperatures really helpful in diagnosing infertility?*

A. Yes, they are helpful if the woman's basal body temperature follows the normal pattern, because this shows that she is ovulating and when. (In theory the normal pattern is biphasic: fairly low at the beginning of the cycle, rising sharply 0.6 degrees or more at ovulation, and then maintaining an elevated level until menstruation.) An abnormal pattern, however, does not necessarily mean the woman is infertile.

Q. *What is the minimum sperm count which is likely to permit conception?*

A. We have no precise answer and perhaps we never will. Every time a "minimum" sperm count is established an exception seems to occur. Because sperm counts fluctuate from day to day, conception may occur because of a fortuitous increase in sperm concentration in a normally sub-fertile patient. Also extra-marital intercourse may explain some occasional instances when conception seemed improbable based upon low sperm counts in the husband. Although the theoretical minimum may be impossible to determine, we know that conception is infrequent in patients whose sperm count is as low as 10 million per cc. For more information, I recommend the unparalleled studies of Dr. John MacLeod.



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PSYCHIATRY



Dana L. Farnsworth, M.D.
Harvard University

Dana L. Farnsworth, a Councilor of the American Psychiatric Association, is the Henry K. Oliver Professor of Hygiene and the Director of the University Health Services at Harvard University. He is a member and past president of the Group for the Advancement of Psychiatry and of the American College Health Association. For many years his interest has been focused mainly on the problems of mental health in students. He has served as chairman of the Fourth National Conference on Health in Colleges (1954) and of the First International Conference on Student Mental Health (1956). He is author of the book *MENTAL HEALTH IN COLLEGE AND UNIVERSITY* (1957).

EMOTIONAL PROBLEMS OF COLLEGE STUDENTS

Are college students more subject to emotional illnesses than other young men and women? Is the incidence of emotional illness among them increasing? These and similar questions are of vital interest to psychiatrists working with college students—and of more than passing interest to any physician whose son or daughter is in college.

Of course, all students have problems. As a writer in LIFE magazine put it last year, "...most college students sleep-walk through their first semester in a daze of homesickness and worry, each thinking that he is the one frightened incompetent who feels this way." He wants to be liked, sometimes so desperately that he will try to gain attention and esteem by behavior that alienates rather than attracts. He is often under great pressure from home to succeed,

sometimes in fields he isn't at all suited to. Competition may be very keen. He is faced with rules of conduct he isn't used to, and lots of new opportunities for trouble.

Upper classmen, too, have problems—the junior who suddenly makes poor grades after two years on the dean's list; the senior who works hard at inventing dozens of elaborate distractions to avoid work. I can remember one sophomore—in fact I can remember quite a few like this one, but one stands out—who showed his inability to deal with his problems by escaping into overactivity. He joined so many organizations and signed up for so many activities that he was soon hopelessly overcommitted, which is probably what he wanted to have happen because it gave him such a handy excuse for failing his exams. And

there are the psychosomatic problems — the baffling fainting spells, the frequent colds and incapacitating headaches. Those who act out their feelings are the most difficult to understand or to tolerate on a college campus. One that I can recall guaranteed that others would dislike him; he destroyed property, used alcohol quite inappropriately, criticized everybody, and lost what he wanted most — friendship!

Fortunately, though, most students can solve their own problems—by ingenuity and by drawing on a reservoir of love and security they have brought from home. But for those whose problems are of long standing and the cause obscure, such self-reliance may be wasteful and inappropriate. About 10 percent of all students are likely to have emotional conflicts severe enough to warrant professional help. A college of 1,000 students can expect to have two to four students a year with quite severe emotional illness. A suicide can be expected every eight to ten years, and abortive attempts will be much more frequent.

Do the emotional illnesses that students suffer differ from those that other young men and women suffer? Well, strictly speaking, no. Students suffer from anxiety and depression, from delusions, paranoia, and the rest. For the psychotherapist, however, there are two important differences, and they are advantages. For one thing, disturbed students are usually "fresh from their symptoms"; the symptoms are novel and the students are alarmed and surprised by them, so treatment is likely to be more effective than when neurotic patterns have become habitual. And college students are likely to be more intelligent than the average group and are usually not burdened by prejudices about accepting

help for emotional problems.

Parental discord or conflict is commonly behind the emotional illness of students —inadequate contact with one or both parents, marked differences between the values held by the family and those held by the college, absent or inconsistent discipline, intolerance and prejudice in parents. However, college psychiatrists are not so much critical of parents as they are desirous of helping their students understand their parents and avoid repeating their errors.

Are emotional disorders in college students increasing? Most college psychiatrists that I have talked to say they are. However, some of this is probably just belated recognition. Whether or not the problem is increasing, however, the colleges are just not going to be able to furnish direct psychiatric treatment for all who could profit from it. They can handle emergencies, of course. But what colleges can do is develop programs to create a climate of understanding about the emotions in which it will be increasingly possible for students to work out their own problems.

That's an awfully abstract prescription, so let me make it more concrete. The college psychiatrist has to work with faculty members and counselors to help *them* do their jobs better when emotional problems arise. Academic counselors frequently must go beyond advising students about their choice of careers and courses: financial aid officers have to give emotional aid, too; chaplains have to be on the lookout for emotional crises; and deans have to think about the attitudes of students toward authority, the methods by which high standards are encouraged, the effects of excessive competition, student government, even the architec-

ture of new dormitories. These faculty members and counselors do not attempt psychotherapy, but their increasing knowledge of emotional reactions enables them to know who should be referred to specialists and how to do it.

So the college psychiatrist's most important job is to develop preventive psychiatry, which, as I see it, means:

—helping students—and teachers too—to understand themselves so

that they increase their conscious control of themselves.

—helping all teachers to do what a few excellent teachers have always been able to do—excite students to do their best, and to enjoy their work.

—resolving more and more problems of growth and development through better educational methods instead of waiting for them to develop into emotional illness.

QUESTIONS AND ANSWERS

Q. *Would it not be dangerous for a student to consult a college psychiatrist because of the possibility of his record being reviewed by deans, government investigative agencies, etc.?*

A. No. College psychiatric records are extremely confidential and information concerning them is given out only by the patient's written permission. To violate such confidences would mean students would not come and thus needed help could not be obtained.

Q. *Do foreign students need more help than the native-born?*

A. No. The incidence of emotional problems is about the same in the two groups though culture conflicts at times make the problems of the foreign-born seem more difficult than those of the American students.

Q. *Don't the extremely bright students have more severe emotional problems than those of "average" intelligence?*

A. No. There is no appreciable difference. Emotional conflict tends to be

based on early environmental influences rather than being based on intellectual capacity. Superior intelligence is not an emotional handicap.

Q. *Shouldn't all colleges require courses in mental health or the psychology of adjustment?*

A. I don't think so, though voluntary courses may be very valuable. Emotional maturity can often be furthered more effectively by indirect means than by academic courses. Attention to the improvement of such matters as student-faculty relations, student government, administration of discipline and attitudes and customs prevalent in student circles are frequently very rewarding.

Q. *Isn't psychiatric treatment of students likely to remove some of the stimuli toward true creative expression, particularly in the arts or in music?*

A. No. Genius may be handicapped by neurosis, but neurosis is not genius.

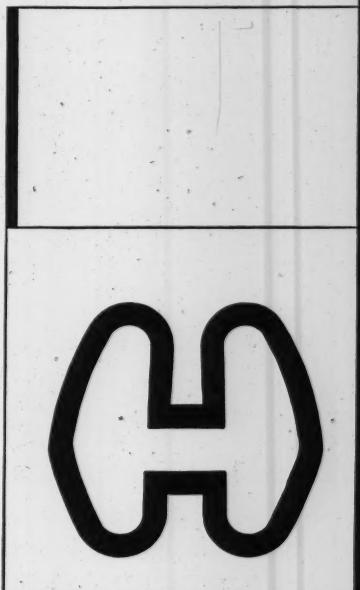
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Mild Hypothyroidism	5 mcg. daily	50-100 mcg. daily
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Female Reproductive Disorders	25 mcg. daily	25-50 mcg. daily
Male Infertility	5 mcg. daily	10-25 mcg. daily (Based on sperm count or sperm motility responses after two to four weeks of treatment at a given dosage level, the daily dosage may be increased by 5 or 10 mcg. If further treatment the desired response has still not been obtained, the daily dosage may again be increased. Although total daily dosage usually need not exceed 25 mcg., as much as 50 mcg. daily may be used if necessary.)
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Endogenous thyroid gland function, reflected particularly by I^31 uptake, may be depressed by 'Cytomel' administration. Depression of this function is most apt to occur with higher dosages (greater than 75 mcg. daily). Experience to date indicates that this effect is not clinically harmful. There have been no unfavorable sequelae in reported instances where 'Cytomel' therapy has been discontinued after depression of I^31 uptake occurred. In such cases this function has promptly returned to normal after discontinuance of 'Cytomel'. Since 'Cytomel' is physiologically related to thyroxine, it is not recommended for use in the presence of angina pectoris, in other cardiovascular disorders, or ischemic states. However, if it is used in the presence of such conditions, the starting dosage should never be more than 5 mcg. daily. If dosage is increased, it should be in increments of no more than 5 mcg. daily at approximately two-week intervals.

Hypopituitarism, morphologic hypogonadism and nephrosis should be ruled out before 'Cytomel' administered.

CONTRAINDICATION: Addison's disease.

FORMULA: Each 'Cytomel' tablet contains 5 mcg. or 25 mcg. of liothyronine (L-triiodothyronine or LT3), as the sodium salt; 25 mcg. of 'Cytomel' is calorigenically equivalent to approximately 1 gr. of thyroid.

AVAILABLE IN TWO DOSAGE STRENGTHS: 25 mcg. (scored) tablets in bottles of 100 and 1000; 5 mcg. tablets in bottles of 100.

Prescribing information adopted Jan. 1961



Smith Kline & French Laboratories

PEDIATRICS



Lewis A. Barness, M.D.
University of Pennsylvania

Lewis A. Barness is Associate Professor of Pediatrics at the University of Pennsylvania School of Medicine, and Acting Chief of Service at the Hospital of the University of Pennsylvania. He serves as Chief of Pediatrics at Philadelphia General Hospital and as Associate Physician at the Children's Hospital of Philadelphia. He received his degree from Harvard Medical School and his residency training at Children's Medical Center of Boston. His investigative work, reported in various journals, has dealt chiefly with the problems of electrolyte balance in children.

HYPERNATREMIA IN INFANTS A Treatment-Induced Complication of Diarrhea?

Diarrhea in infants is so common that it may seem hardly worth another thousand words. We all know the usual treatment: eliminating offending foods, decreasing the intake of food, perhaps curtailing the diet to the point where only boiled skimmed milk or clear fluids are given. Such measures are almost always successful. When the diarrhea is severe or prolonged, however, a serious complication, hypernatremia, may develop in spite of treatment.

Hypernatremia is rare, but at the University of Pennsylvania Hospital, we seem to be seeing more cases in recent years. Part of this increase may be due to better detection methods. But, mounting evidence also points to *improper treatment of diarrhea* as a possible cause — administration of foods which have a higher content of salt than we think.

In any event, careful attention to one detail of treatment — salt intake — may help avoid unnecessary cases of this serious and potentially fatal complication.

Hypernatremia is an increased serum sodium, a level more than 150 meq/liter. Diarrhea predisposes the infant to hypernatremia because he loses water in excess of salt not only through the increased bowel movements but also through stepped-up sweating and breathing. His kidneys concentrate electrolytes in the urine, trying to maintain normal salt-and-water balance, but they may fail to do so for several reasons: if water loss is rapid or extreme, the shortage of water itself reduces the salt-ridding capacity of the kidneys; besides this, the infant's kidneys are still immature, and, so, operate under a handicap. When foods or fluids containing too much salt are

added to this precarious situation during treatment of diarrhea, hypernatremia may occur.

Clinically, hypernatremia differs from simple dehydration in several ways. The child with isotonic or hypotonic dehydration (water loss without excessive salt retention) appears markedly dehydrated; his fontanel is depressed, his eyes sunken, and his tongue, dry. The skin over his abdomen creases easily, and if raised will remain elevated for several seconds (a good diagnostic sign).

In contrast, the child with hypernatremia usually appears hyperirritable. He looks less dehydrated than one would expect from the amount of water lost, judging by the duration and severity of diarrhea. This is an important point, because it underscores the need for accurate history. He may have a bulging fontanel, and a stiff neck resembling that in meningitis. He is apt to have vomited, and the skin over his abdomen is "doughy" and resilient.

Full-blown hypernatremia is a serious disease state: the patient is prone to convulsions and may suffer permanent brain damage or even death. Convulsions may result from subdural fluid collection, brought about by osmotic changes in the brain tissues. Or, they may result in too rapid treatment with a dilute solution, which may produce hypotonicity of the plasma in the brain cells, a type of water intoxication. Or, correction of the severe acidosis accompanying hypernatremia may result in hypocalcemia, a cause of tetanic seizures. Finally, the altered cellular dynamics may result in easy bleeding into the brain.

Safeguarding Against Hypernatremia

Although we do not know all the causes of hypernatremia, we do feel that consideration of the electrolyte content of food and fluids given the diarrheic infant is important. Changes that would be negligible in an adult may be disastrous to a small child.

Concentrated foods should not be given during treatment of diarrhea. Boiled skimmed milk, commonly prescribed for feeding during diarrhea, is a rich and sometimes dangerous source of electrolytes. Skimmed milk contains approximately 8 grams of salt per quart, and approaches normal saline in sodium and chloride content. Its high protein content, incidentally, increases the water excretion requirement, and accelerates the dehydration process. Sometimes the physician may tell the mother to give by mouth an electrolyte solution containing one teaspoon of salt and two tablespoons of sugar to a quart of water. Even this half-normal saline solution, in the presence of much water loss, may result in sodium and chloride retention. Therefore, whenever either skimmed milk or clear electrolyte solutions are fed, they should first be diluted so that the electrolyte content approximates no more than $\frac{1}{2}$ -normal saline. For skimmed milk, this means 1 part milk and 4 parts water; for clear fluids, a solution containing two tablespoons of sugar and at most about $\frac{1}{4}$ - $\frac{1}{2}$ teaspoon of salt per quart. Similar concentrations should be used for infusions by vein, rectum, or clysis.

Treating Hypernatremia

Once a child has developed hypernatremia, treatment is a delicate matter:

The serum sodium should not be lowered too rapidly. This seems paradoxical, for one would think the quicker the repair, the better. In a sense, though, the child's body has partially adjusted to the abnormal condition, in an attempt to survive. For this reason, we administer *dilute solutions slowly*. Our regimen consists of a solution of 5% glucose in water, 4 parts, and $\frac{1}{6}$ M. sodium bicarbonate, 1 part, given parenterally. Intravenous infusion runs no faster than 10 drops per minute.

Since too rapid infusion may result in seizures, we watch the child carefully for signs of overhydration. If he doesn't

respond in the first 24 hours, we usually order a blood transfusion, 10 cc/lb. Potassium, 1-2 meq/lb/day is given when he begins to void. If he develops seizures, we immediately inject calcium gluconate, 10 cc. of 10% solution, and sedate him.

IN SUMMARY: Hypernatremia is a rare complication of diarrhea, but seems to be on the increase. Safeguarding against it involves careful attention to the electrolyte content of food and fluids administered during diarrhea. Remember that skimmed milk is high in electrolyte content, so should be diluted.

QUESTIONS AND ANSWERS

Q. *Besides an elevated serum sodium level, what are other typical laboratory findings in hypernatremia?*

A. The serum chloride level is usually over 120 meq/liter. The serum CO₂ level may be as low as 10 meq/liter, indicating acidosis. If a lumbar puncture is done (we never remove more than 3 ml. of fluid) a few lymphocytes may be found. Spinal sugar is usually normal, and the protein, normal or slightly elevated. Subdural puncture may reveal subdural collection of fluid, even early in the disease. Urinalysis may reveal white cells, casts, and a 1+ or 2+ protein. The urine is usually acid and its specific gravity usually (but not always) low.

Q. *You state that severe acidosis accompanies hypernatremia. Why is this?*

A. Total body base is lost by diarrhea. Also, the child is really starved and must burn acid-producing body stores.

Q. *What dosage of the dilute solution do you use for treating hypernatremia?*

A. For children weighing less than 15 lbs., 60-75 cc/lb/day; for weight between 15 and 25 lbs, 45-60 cc/lb/day; for weight between 25 and 40 lbs, 30-45 cc/lb/day. The dosage decreases as the weight increases because water loss is relatively greater in smaller children.

Q. *What are the dangers of too rapid infusion of electrolytes in the hypernatremic child?*

A. Possibly overhydration and peripheral edema, or pulmonary edema and cardiac decompensation.

Iron-deficiency anemia may be suspected in nearly every convalescent patient—following infection, or surgery, or childbirth. And in iron-deficiency anemia, iron—and iron alone—is specific.

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SURGERY



**James Graham, M.D.
Springfield Clinic, Springfield, Illinois**

James Graham serves as Chairman of the Department of Surgery at the Springfield Clinic in Illinois, and is a Fellow of the American College of Surgeons, International College of Surgeons, American Society of Abdominal Surgeons, and American College of Chest Surgeons. He is past president of the Sangamon County Medical Society, and currently serves on the National Advisory Council of the Community Funds and Councils of America, and on the Special Projects Committee of the Illinois Commission on Youth. The author of 22 articles for scientific journals, he is especially interested in techniques of communication and is a member of the American Medical Writers' Association.



**Almon A. Manson, M.D.
Springfield Clinic, Springfield, Illinois**

Almon A. Manson received his medical training at Northwestern University Medical School, and currently is Attending Staff Physician at the Springfield Memorial Hospital and St. John's Hospital in Springfield, Illinois. He is an Associate Fellow of the American College of Gastroenterology, and like Dr. Graham, has devoted special attention to the problems of explaining medical conditions to patients.

IMPROVING YOUR EXPLANATION OF SURGERY

"Bringing the news" to relatives of a patient who has just undergone a major operation is an experience familiar to all surgeons — and to all physicians, for that matter. It is a challenging experience, primarily because our background and approach to surgery differs so much from that of our audience.

Consider, for example, the following typical scene. The husband, the oldest son, and the sister of the patient wait anxiously to see us after the operation. No one has told them whether the operation went well, or failed...or was even performed. As we approach, it's clear

that the group hopes to see reassurance in our eyes.

"Everything's going to be all right," we say. For some reason, they look even more worried, and then the sister asks, "You don't mean she has cancer, do you?" A surprising question, because we thought we had just reassured them. Besides, the operation was for gallstones, and we had not expected cancer. We answer the question, and go on to explain why we removed the gallbladder. When we finish, the husband asks, "Will she have to have another operation?" Then we realize that what we

have said has not been understood, that we are all speaking the same language, but somehow in a different way — on a different "wave length."

Scenes like this through the years led us to wonder how we could improve our method of explaining surgery to the patient and his relatives. For two years, we kept a record of the questions most frequently asked about surgery. We soon began to see certain questions repeated over and over again, and so decided to prepare booklets that would *anticipate* the questions, simplify our explanation, and improve patient cooperation. One of the booklets was described in the first of a series of articles for the *Journal of Abdominal Surgery**. The response to this article was both surprising and gratifying, and it confirmed our belief that physicians do try seriously to make surgery understood — and, at the same time, would like to improve their method.

We all know the importance of explaining surgery; aside from relieving anxiety about the operation, it is essential for gaining the patient's cooperation (in some cases, even necessary for getting consent to operate). But why is explaining surgery difficult? No doubt our use of technical jargon has something to do with it. Probably more of a hindrance is the great difference between the viewpoint of the physician and the viewpoint of the patient and his relatives. We approach illness objectively, thinking of the anatomical problems, causes, implications, and prognosis. The patient approaches illness subjectively, thinking of pain, disability, changes in eating, walking, urinating, feeling, getting about in the world. We are concerned

about a segment of gastrointestinal mucosa that shows proliferative changes. He is afraid of dying.

Our study showed that frequently-asked questions fall into two patterns. The first reflects anxiety: *How is he? Will he come through it all right? Just how bad is he? Will this take care of everything?* Such questions pertain to whether the patient will live, whether his condition is critical, and whether he is cured. They should be anticipated and answered as honestly as possible. Immediately following comes, *Did you find cancer?* This question is asked in nearly every major operation, and almost overshadows all others. Until it is answered, technical explanations are not worthwhile, because they will not be heard.

The second kind of question comes more often from the patient than his relatives, and is usually practical: *Will I have to be on a diet? Will I have to take medicine? Should I wear a support? Can I walk up stairs? When can I drive my car?*

Use of Prepared Booklets and Illustrations

Probably every physician has some system for explaining surgery. We at Springfield Clinic used to rely heavily on illustrations collected from journals and magazines, clipped, encased in plastic, stored in a drawer. But these illustrations were not always well oriented to the operative field, and excessive details were sometimes confusing. We now have short (4-12 page) booklets dealing with three major operations: stomach, biliary tract, and hernia. They are written in lay terminology and contain simplified illustrations. We use them routinely, going over them paragraph-by-paragraph, noting individual variations for the case at hand (check-boxes help do this). In selecting illustrations,

*Explaining Surgery to the Patient: I. Biliary Tract, *J. Abdominal Surg.*, 2(4):88 (July) 1960. II. After Your Hernia Operation, *ibid.*, 2(5):122 (September) 1960. (Paper describing pamphlet on stomach surgery, to be published.)

we struck a balance between total body orientation and particular organs. For upper abdominal surgery, for example, we first show the patient an illustration of the entire abdomen, and then a second illustration of the stomach or biliary tract. (See Figures 1 and 2.) Total body

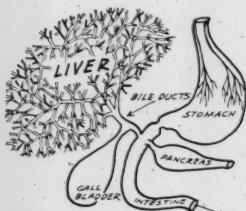


Figure 1.
Diagram used to show gallbladder,
liver, stomach and intestines.



Figure 2.
Two of 6 diagrams in booklet on stomach
operation; used for sketching in details.

orientation, showing the abdomen and thorax separated by the diaphragm, is not necessary; most of our patients can follow our explanation if we orient them by starting with the stomach. We also became convinced that, as a general rule, illustrations should accompany the text, rather than vice versa. Although one picture may be worth a thousand words, it's not necessarily true in explaining surgery. Two hundred words are better than many pictures.

Our booklets are a device that could be used for operations other than the three we have covered, and in fact can serve as a pattern for booklets on any disease. We have found them extremely helpful because they remind us to cover all the necessary points about the operation, and, by organizing our discussion, save considerable time. More important, perhaps, is that they are permanent—something the patient or relatives can take home and study as often as necessary until the various points are clear.

QUESTIONS AND ANSWERS

Q. What are some questions often asked about biliary tract surgery?

A. The 10 most frequent questions come in this order of frequency: 1. Did you find cancer? 2. Was anything else wrong? 3. Are you going to test what you have removed? 4. Did you take out my gallbladder? 5. How will I get along without my gallbladder? 6. What caused the gall stones? 7. Did you take out my appendix? 8. Can I get gall stones again? 9. Was my liver all right? 10. Will I have to be on a diet?

EDITOR'S NOTE: Single copies of the 3 booklets described in this article may be obtained free of charge. Please address requests to CONSULTANT, Smith Kline & French Laboratories, 1500 Spring Garden Street, Philadelphia 1, Pennsylvania.

Q. How extensively do your booklets cover recuperation?

A. At least half of each booklet gives practical instruction on matters such as exercise, bathing, and usual time for resuming normal activities. The booklet on stomach operation gives detailed diet instructions for peptic ulcer control, naming acceptable foods and foods which should be excluded from the diet.

Q. What do your booklets cost?

A. The initial printing of an 8-page booklet cost us \$162.40 for 2,000 copies.



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TWO CONVENIENT FORMS: 'Acnomel' Cream (sulfur, 8%; resorcinol, 2%; hexachlorophene, 0.25%; in a stable, grease-free, flesh-tinted vehicle). Standard strength for home application, morning or night. 'Acnomel' Cake (sulfur, 4%; resorcinol, 1%; hexachlorophene, 0.25%; in a washable, flesh-tinted cake base). Half-strength, in handy plastic containers, for convenient use away from home.

ADMINISTRATION: Cream: One application daily is usually sufficient. Patients with oily skin may apply more often. Apply in small amounts with finger-tips. Keep out of eyes and off eyelids.

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Prescribing information adopted January 1961.

RHINOLOGY



**Albert P. Seltzer, M.D.
Philadelphia General Hospital
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Albert P. Seltzer is Chief of the Ear, Nose and Throat Departments at Philadelphia General Hospital and Mercy-Douglass Hospital; senior attending physician at Albert Einstein Medical Center; and Associate Professor of Otolaryngology, University of Pennsylvania Graduate School of Medicine. He received his medical training at Temple University Medical School and the University of Pennsylvania Graduate School of Medicine. In addition to having contributed articles on all phases of otolaryngology to various journals, he is author of the text *PLASTIC SURGERY OF THE NOSE* (Lippincott).

ON THE IMPORTANCE OF TREATING SINUSITIS IN CHILDREN

In children, there are about as many runny noses as there are noses, which explains why all of us—parents and physicians—tend to neglect them, sometimes to the point where serious sinusitis results. As an otolaryngologist, I see the more serious cases, and that fact may make me seem overly concerned over what is, after all, a universal ailment, usually mild and short-lasting even if untreated. On the other hand, I think too many parents are too *little* concerned over runny noses and should be told so. They should also be told what to do about them, which is what I will try to do in this short article.

As an example of what can happen when sinusitis becomes severe, consider the trials and tribulations of a 10-year-old girl who was referred to me at the hospital for treatment of a continuous nasal

discharge. The discharge had been present for about a month, beginning soon after she had Asian flu; we found that it contained penicillin-sensitive staphylococcus. She complained of excruciating head pain, particularly over the cheeks, which radiated to the scalp and behind both eyes. After a nasal suction, it was possible to trace the pus to both maxillary ostia. The tonsils and adenoids had been removed and large foci of mucopus could be seen in the oropharynx. X-ray examination showed thickened lining in both maxillary sinuses, with a fluid level apparent. Acute maxillary sinusitis was diagnosed, and was treated with warm packs and penicillin (3,000,000 units in divided doses for 10 days). This lessened the discharge but not the pain. After 10 days, we decided it would be necessary to tap the sinuses, since swelling made it impossible to catheterize the antra

through the natural ostia. Cocaine gel 10% was applied to the mucosa beneath the inferior turbinates in both sides of the nose, and a Lichwitz needle was used to puncture the sinuses and remove more than 15 cc. of pure white pus by suction. Then the sinuses were irrigated with saline solution, twice, after which the patient's temperature and pulse dropped to normal and she had immediate relief from headache. She was discharged from the hospital four days later and, after more than three months, there has been no recurrence.

Actually, as bad as that case was, there are worse ones, mainly because of the sinuses' anatomical drawbacks, which make it possible for infection to spread easily. All of the nasal sinuses are connected to one another by thin mucosal linings, and are so accessible from the nose that it is doubtful if they ever escape involvement in any nasal infection.

Paths of Infection

The maxillary antrum, largest of the sinuses, is present at birth and is the usual center of infection, especially in young children. The ethmoid cells, between the middle turbinate and the wall of the orbit, also are formed at birth and also are likely to become infected in children. Sinusitis which extends to the anterior ethmoid cells, as it often does, frequently causes high fever, leucocytosis, and — when very severe — swollen tissues of the face and hard palate, sometimes even with loosening of the teeth and hemorrhage into the gums. Ethmoid cell infection may also produce orbital cellulitis. Transmitted infection can proceed into the eustachian tube through the nasopharynx and on into the middle ear, causing deafness. It may extend into the mastoid cells and beyond, with formation of brain abscess.

The frontal sinuses are seldom air-containing before the age of 5, so are unlikely to become infected in young children. In older children, however, where the frontal sinuses are well-developed, an infection may extend from them into the diploë of the frontal bone, with resulting osteomyelitis. This is usually accompanied by high fever, edema over the forehead, and general prostration.

The child I described earlier might have been spared much pain and discomfort if her runny nose had been treated early. That sounds like Monday morning quarterbacking, because, obviously, for every severe case like this one, there are a hundred that are mild. So how are parents — or physicians, for that matter — to know which is which? However, it doesn't really *matter*; because the early treatment I am talking about is not complex or difficult; it is simple enough to be applied to any child whose nasal discharge persists beyond three days.

Guide to Treatment

Obviously, the simplest measures—warm packs and steam humidification of the air — should be tried first; however, I have been surprised to discover how few mothers know just what a warm pack is, or how to set up a steam humidifier. And even fewer know why they're doing it. So I tell them, as plainly as possible, and I include some of the anatomy of the sinuses so they will know what these measures are designed to accomplish — i.e., adequate ventilation so that drainage can take place.

I prescribe vasoconstricting nose drops, but I also make sure they know what "supine" means when I tell them how to instill them. And I warn against over-

using the drops, because too many parents reason that "if a little helps some, a lot will surely provide total cure."

I prescribe aspirin or codeine if there is pain, some sedation if the child is restless, and an antihistamine to help counteract edema if there is a history of allergy. I insist on bed rest if the child has a fever, and if his fever persists for three or four days or appears toxic, I administer sulfonamides or penicillin. To determine the antibiotic of choice, I have a culture from the patient's nasal cavity tested for sensitivity. When these measures fail, one has to consider puncture or surgery, and an otolaryngologist should be consulted. In children, recurrent colds may be just that, or may actually be chronic sinusitis with acute exacerbations. In chronic patients, the nasal mucosa may be either hypertro-

phied or atrophied, and polyps or enlarged turbinates often result if the condition is not corrected. If allergy is suspected, or known from the patient's history, antihistamines should be included in the therapy. When allergy appears to be the cause of recurrent or chronic sinusitis, I refer my patients to an allergist for tests and desensitization. I haven't yet mentioned the most important part — getting children to take reasonable care of themselves in cold, damp weather. It's also the most difficult part to put into effect, especially with the older children, who consider it "sissy" (or "square") to wear hats and rubbers. Perhaps someone can think of a way to show them how unheroic a red runny nose and bleary eyes really look. Perhaps if we can't appeal to their common sense, we can to their vanity!

QUESTIONS AND ANSWERS

Q. *Don't you ever prescribe saline irrigation for sinusitis in children?*

A. I don't prescribe it to be done at home, because I've seen quite a few instances of ear complications, when the solution passed through the eustachian tube. I feel that saline irrigation is effective in some cases, but that it should be done by the physician.

Q. *Do you find allergy to be an important factor in many cases of chronic sinusitis in children?*

A. Yes. Without actually counting the cases in my files, I would guess allergy is a factor in about 5 to 10%. The irritation of nasal mucosa by

allergens makes it very easy for infection to gain a foothold. When allergy appears to be causing recurrence, I refer patients for desensitization and other specialized therapy. It's especially important for allergic children to take sensible precautions — hats and rubbers in cold, damp weather — when their sensitivity is troubling them, as during the ragweed season. Sometimes these patients feel better when it is raining, because there is less pollen in the air, but this is just when they are likely to become chilled and contract sinusitis to complicate the allergic reaction when the wind begins to blow pollen around again.

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1. Ernst, E.A.: in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, pp. 104-109.
2. Bram, G.: The Treatment of Psychoneurotic Conditions with Trifluoperazine, *Brit. J. Clin. Pract.* 14:107 (Feb.) 1960.



leaders in psychopharmaceutical research

SPECIAL FEATURE



**Emily H. Mudd, Ph.D.
Marriage Council of Philadelphia**

Emily H. Mudd has devoted 28 years to dealing with marriage problems, both as a practicing marriage counselor (she is now Executive Director of the Marriage Council of Philadelphia) and as an educator (she is Professor of Family Study in Psychiatry, University of Pennsylvania School of Medicine and lecturer at Bryn Mawr and Swarthmore Colleges). She has authored 78 papers for scientific journals, 45 articles for lay publications on marriage problems, and several textbooks, including *MAN AND WIFE; A SOURCE BOOK OF FAMILY ATTITUDES, SEXUAL BEHAVIOR, AND MARRIAGE COUNSELING*. Part of her current efforts are devoted to courses in marriage counseling for senior medical students at the University of Pennsylvania.



**Martin Goldberg, M.D.
University of Pennsylvania**

Martin Goldberg, Associate in Psychiatry, University of Pennsylvania School of Medicine, has focused his attention on the psychiatric aspects of marital adjustment, and is a co-author of the text *MAN AND WIFE*. He received his training at Jefferson Medical College, Mt. Sinai Hospital, and the Hospital of the University of Pennsylvania—and is now on the staff at the Institute of the Pennsylvania Hospital. At regional postgraduate seminars in Pennsylvania, he has worked with practicing physicians on problems of marriage counseling.

HOW TO HELP YOUR PATIENTS WITH MARITAL PROBLEMS

So many people experience serious marital tensions and conflicts at some point in their marriage that it is inevitable that some, as patients, turn to their family physician for help. We have learned from our work with general practitioners that physicians generally

do try to help. But, because marital problems are extremely difficult, and because some cases end with divorce despite help, the physician is often left uncertain about how well he handled the situation—and unsure whether he should have tried at all.

Indeed, there are times when all efforts to help with marriage problems are doomed because the die is already cast: when the couple has reached a point where the relationship has become meaningless and destructive—and either one or both partners have no desire to preserve the marriage. But in many cases, marriage counseling can be effective (in about 60% of cases, we have found at the Marriage Council of Philadelphia). Thus, you can be of genuine help, if you use basic techniques of counseling.

What are these techniques? To understand them, let's examine four problems involved in marital counseling.

First, most people who come to you with marital problems are apt to be deeply confused as to what sort of help they need. Too often, the patient expects you to "do something"—something almost magical. More exactly, he may expect to be told what to do to resolve the problem and may proffer a passive willingness to abide by whatever you recommend. Thus, it is very tempting to give specific advice. It is all too easy to say, "Why don't you and your husband have a baby, that will help a lot" . . . or "You and your wife ought to get away for a few weeks vacation." But unfortunately, although the patient may demand advice, this is the one thing he really needs least!

Inevitably, the troubled spouse has been getting great quantities of this very commodity from family and friends. Such counsel tends to cancel itself out—since some will advocate one action and others a directly opposite one. Moreover, the person with a marital problem is generally quite unable or unwilling to follow advice (no matter how clever the advice) even though he avidly seeks it.

Your patient may ask for answers and wish to listen to your wisdom, but instead you should encourage him to become an *active* collaborator in investigating *what really* is troubling him in the marriage, *why* it is, and *what* the possible alternatives are for improving the situation.

Second, each spouse in a marriage conflict is able to see what the partner's part in the problem is, but usually not his own. A great deal of blaming and accusing is exchanged as to just whose fault is involved. Thus, you may be looked to for judgment, for deciding who is right and who is wrong. However, it "takes two to tango," and if you remain reasonably objective and hear both sides of the story, you will find that—almost always—both the husband and wife are contributing their share to the difficulties. In the Division of Family Study and Marriage Council of Philadelphia, we have found it important to see both husband and wife *individually* and give each an opportunity to talk over the problem. If you gradually begin to question each spouse about his own involvement, each may be able to begin the all-important shift to seeing what they are doing individually to contribute to the tensions. In addition, it is helpful at some point to see the couple *together* in your office. This procedure offers direct evidence of the way they interact (enlightening and sometimes surprising evidence).

Achieving Objectivity

Third, to be helpful, the physician must be reasonably objective. This is easy to say but not always easy to achieve, because all professional people have their own prejudices, preconceptions

and value systems as well as religious and ethical beliefs concerning marriage. It is wise to take stock of what these are, be aware of them at least to some degree and watchful that they do not adversely influence reactions with patients. Whatever our own ideas are about divorce, for example, it must be granted that for some couples, divorce may emerge as the most sensible and healthful conscious choice of solution for both. For others, due to religious or other reasons, divorce may be unwise.

Above all, patients need to feel free to discuss their real feelings and needs with the physician, without fearing the usual pressures of social approval or disapproval. Given such an opportunity, it is surprising how often husbands and wives can begin to see their problems in

perspective; to recognize what they are doing to contribute to them; to stop seeking a magical answer; and to begin to shape their own decisions in relation to their personal and community realities.

Another way to help achieve objectivity is to supplement discussions in the office with reliable books and pamphlets. A Family Book Shelf (listed at the end of this article) costs only about \$15.00, and is a great asset to every physician's office and can be recommended for the patient's home.

Fourth, solving marital problems takes time and patience. The person involved in marriage problems generally wants to resolve them quickly and feels that "something must be done" immediately. But you will find that time itself is often

QUITE
DIFFERENT
FROM
OTHER
ANALGESICS

DAPRISAL®

- Relieves pain
- Changes the patient's attitude toward pain



FORMULA: Each 'Daprisal' tablet contains Dextroamphetamine sulfate (brand of dextroamphetamine sulfate), 5 mg.; amobarbital [Warning, may be habit forming], $\frac{1}{2}$ gr. (32 mg.); aspirin, $2\frac{1}{2}$ gr. (0.16 Gm.); phenacetin, $2\frac{1}{2}$ gr. (0.16 Gm.).

DOSAGE: 1 tablet every three hours as needed. (With light sleepers the final dose should not be taken so late in the day as to interfere with sleep.)

SIDE EFFECTS—insomnia, excitability and increased motor activity—are infrequent and ordinarily mild.

CAUTIONS: Use with caution in patients hypersensitive to sympathomimetic compounds or barbiturates; in cases of coronary or cardiovascular disease; and in severe hypertension.

AVAILABLE: Unlike most analgesics, 'Daprisal' is available on prescription only. In bottles of 50.

DAPRISAL®

Prescribing information adopted January 1961.

an important element of healing in these situations, just as it is in many illnesses. Rash, impulsive decisions about their marriages almost always spell trouble for patients. You can frequently help by getting both husband and wife to slow down and avoid hasty steps. People need time to change and grow, and need patience in attempting new ways.

Draining Off Anger

You can encourage the couple to examine all sides of their difficulties and to talk them over with each other as well as with you. It is amazing how often communication between husband and wife has deteriorated into a repeated exchange of misunderstandings, hurts and insults. By seeing both spouses separately and then together, anger is drained off, new perspective and under-

standing of each other's feelings and needs are gained. Hope of something new and happier results from your interest and concern, and this in turn may enable the husband and wife to talk to each other meaningfully and constructively.

These are perhaps the most important principles to remember in marriage counseling. As we have learned from participating in seminars on marriage counseling held for physicians in various Pennsylvania communities, many physicians are already applying these principles—with success in many cases, and seldom, if ever, making a bad situation worse. There are other practical points about marriage counseling. We have tried to cover some of them in answers to the following questions which come up repeatedly in our seminars.

to end "long-suffering resignation" in dysmenorrhea

OTHER INDICATIONS: 'Edrisal' affords unusually effective relief in such commonly encountered conditions as: chronic headache; low back pain; neuritis; neuralgia; arthritic pain; rheumatism and allied conditions; muscle and joint discomfort; sinusitis; phlebitis; certain cases of migraine.

FORMULA: Each tablet contains Benzedrine® Sulfate (brand of amphetamine sulfate), 2.5 mg.; aspirin, 2½ gr. (0.16 Gm.); phenacetin, 2½ gr. (0.16 Gm.). Unlike most analgesic preparations, 'Edrisal' is available on prescription only.

ADMINISTRATION: Two tablets every three hours if needed. Only in exceptional cases will more than six to eight tablets be required in a 24-hour period. For best results, 'Edrisal' should be given about half an hour before eating. In dysmenorrhea, best results are obtained by starting medication two days before menstruation.

In higher dosage ranges, certain individuals may experience some disturbance of sleep if 'Edrisal' is administered in the late afternoon or evening. This, however, can easily be controlled with a mild sedative.

SIDE EFFECTS: Instances of insomnia, excitability and increased motor activity—when they occur—are ordinarily mild, and can be controlled by adjustment of dosage.

CAUTIONS: Use with caution in patients hypersensitive to sympathomimetic compounds; in cases of coronary or cardiovascular disease; and in the presence of severe hypertension.

CONTRAINDICATIONS: Hyperexcitability; agitated pre-psychotic states.

AVAILABLE: In bottles of 50 and 500 tablets.

Prescribing information adopted January, 1961.

Patients with dysmenorrhea need not resign themselves to periodic suffering. 'Edrisal' therapy—begun two days before menstruation—usually relieves their symptoms: cramps, pain, headache, lethargy and depression.

A recent study¹ of the use of 'Edrisal' in dysmenorrhea showed good results in 126 of 142 patients—88%.

1. J. Am. M. Women's A.
14:415 (May) 1959.

EDRISAL®

antispasmodic • analgesic • antidepressant

QUESTIONS AND ANSWERS

Q. Aren't there a great many marital situations that are past all help, where the doctor should simply refuse to get involved in any counseling?

A. In most such situations, the spouse will seek out a lawyer rather than a doctor. If a patient presents a marital problem to you, it generally indicates that he really wants to keep the marriage together, and you may be able to help him do so. To avoid the situation will often make the patient feel badly rejected. If more time is required than you can give, or if the situation seems overly complex, you may prefer to refer the patient to marriage counseling facilities or to a family service agency (one of these is available in most good-sized cities).

Q. Should the doctor's goal in these problems be to save the marriage whenever that is at all possible?

A. Really, the doctor's goal should be to help the couple arrive at the solution which best meets the needs of each partner. If this can be done by preserving the marriage, that's fine. But it can also evolve that both spouses will decide that they'll be happier and healthier if they do dissolve a marriage that has become destructive or meaningless. In any case, the decision to stay together or to divorce must be made by the couple, never by the doctor.

Q. What do you do when one spouse refuses to come in and talk over the

problem, even though the other is asking for help?

A. We have found it wise to go ahead and see the interested partner. Very often the absent spouse will change his mind and come to see you, if only for the announced purpose of presenting his side of the story.

Q. Don't you run the risk of being caught in the middle in counseling patients with marital problems? How often do both husband and wife turn on the doctor and come to resent his attempts at help?

A. This happens quite infrequently — if you avoid being authoritative, avoid telling the couple what to do. Most patients appreciate a sincere effort to be helpful, even when it turns out that the situation cannot be improved.

Q. Some people with marriage problems just seem to get more and more confused, anxious, and uncertain as they consider their difficulties and as you try to help. What can be done with them?

A. When this happens, you may well be dealing with someone who is suffering from a serious emotional disorder such as schizophrenia or an obsessive-compulsive reaction. Such reactions are characterized by tremendous ambivalence and uncertainty. If you decide the patient is in this category, you should try to refer him to a psychiatrist or clinic for more intensive help.

Q. If a patient wants specific information on sexual or other aspects of

marriage adjustment, are there suitable books and pamphlets that the doctor can have in his office or recommend to the patient?

A. Yes: The Marriage Council of Philadelphia, 3828 Locust Street, has a

lending library available to interested persons in the community. The following material from it may serve as a Family Book Shelf for the doctor's office or the patient's home at a cost of \$15.10.

A FAMILY BOOKSHELF (total cost \$15.10)

PREPARING FOR MARRIAGE

Peterson, James A., *Education for Marriage*, New York: Scribner's, 1956 (\$5.50)
So You Think It's Love, Public Affairs Pamphlet #161 (25¢)

THE MARRIAGE GROWS

Levy, John and Munroe, Ruth, *The Happy Family*, New York: Knopf, 1943 (\$3.50)
Building a Successful Marriage, and Personal Adjustments in Marriage,
The National Council, Dept. of Christian Education, 281 Park Avenue South, New
York 10, New York (15¢ each)
The Modern Mother's Dilemma, Public Affairs Pamphlet #247 (25¢)
Making the Grade as Dad, Public Affairs Pamphlet #157 (25¢)

SEXUAL ADJUSTMENT

Butterfield, Oliver M., *Sexual Harmony in Marriage*, New York: Emerson, 1953 (50¢)
Greenblatt, Bernard R., *A Doctor's Marital Guide for Patients*,
(Both Catholic and non-Catholic editions). The Budlong Press, 5428 N. Virginia Ave.,
Chicago 25, Illinois (\$1.50)

THE COMING OF CHILDREN

Infant Care, Children's Bureau Publication 8, Revised Ed. (free)
Your Child from One to Six, Children's Bureau Publication 30, Revised Ed. (free)
Your Child from Six to Twelve, Children's Bureau Publication 324 (20¢)
How to Discipline Your Children, Public Affairs Pamphlet #154 (25¢)
How to Tell Your Child About Sex, Public Affairs Pamphlet #149 (25¢)

FOR THE CHILD AND PARENT TO READ

Gruenberg, Sidonie M., *The Wonderful Story of How You Were Born*,
Garden City, Doubleday, 1952 (\$2.00)

FOR THE ADOLESCENT AND PARENT TO READ

Duvall, Evelyn M., *Facts of Life and Love for Teenagers*,
New York, Popular Library, 1953 (25¢)

MATURITY

When You Grow Older, Public Affairs Pamphlet #131 (25¢)

EDITOR'S NOTE: For the convenience of readers who wish to purchase the entire set of these books and pamphlets, CONSULTANT can make special arrangements to have them sent by one supplier, Edward P. Dolbey & Company of Philadelphia. The cost is \$15.10 plus mailing charges. Please send your request to CONSULTANT, SK&F Laboratories, but do not enclose payment. You will be billed by the Dolbey Company after delivery.

in "morning sickness"
keep her spirits up...
and her breakfast down



Compazine® Spansule®

brand of prochlorperazine

brand of sustained release capsules

To keep her spirits up—One 'Compazine' Spansule capsule on arising provides a daylong calming effect that helps to keep your patient on an even emotional keel. Anxiety and irritability are controlled, yet your patient stays alert.

To keep her breakfast down—One 'Compazine' Spansule capsule at bedtime provides antiemetic action that lasts throughout the night and into the morning—thus protecting against "morning sickness."

15 mg. capsule—ideal for once-a-day administration*

10 mg. capsule—ideal for twice-a-day (q12h) administration

In labor and delivery—'Compazine' Injection is particularly useful to relieve anxiety or to control nausea and vomiting.

For complete prescribing information, see back of magazine.

Smith Kline & French Laboratories, Philadelphia



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Prescribing Information

INDICATIONS: 'Coplexen' is indicated for use in children to control cough, nasal congestion, fever, muscular aches and pains, irritability, restlessness and insomnia. Recommended for the cold complex in children, as seen in coryza, rhinitis, pharyngitis, tonsillitis, laryngitis, sinusitis, bronchitis, pneumonitis and other acute upper respiratory infections.

In croup: While experience is still limited, 'Coplexen' Liquid has demonstrated unusual effectiveness in relieving this distressing syndrome.

USUAL DOSAGE:

Weight	Dosage
10 to 24 lbs.	½ tsp. at 4- to 6-hour intervals, if needed
25 to 74 lbs.	1 tsp. at 4- to 6-hour intervals, if needed
75 lbs. or more	1 or 2 tsp. at 4- to 6-hour intervals, if needed

The bedtime dose may be repeated, if needed, to induce sleep.

Total 24-hour dosage for children 10-24 lbs. should not exceed 3 tsp.; for children 25-74 lbs., 6 tsp.; for children 75 lbs. and over, 9 tsp.

'Coplexen' Liquid may be administered concomitantly with antibiotics, sulfas, or aspirin. If administered with central nervous system depressants, dosage should be adjusted carefully to avoid possible excessive sedation.

CAUTIONS: Side effects, mainly unwanted sedation, are rarely seen with 'Coplexen'. Since it contains a phenothiazine derivative (trimeprazine), patients taking 'Coplexen' should be watched for possible occurrence of agranulocytosis or other serious side effects. Paradoxical stimulation with muscle incoordination has been rarely reported with trimeprazine. Should it appear, 'Coplexen' administration should be halted; no other measures are needed.

FORMULA: Each 5 ce. teaspoonful contains trimeprazine as the tartrate (Temaril®), 2 mg.; phenylpropanolamine hydrochloride, 10 mg.; acetaminophen, 120 mg.; alcohol, 10%.

AVAILABLE: In a soothing fruit-flavored liquid in 12 fl. oz. bottles; usual prescription size, 3 fl. oz.

Prescribing information adopted Jan., 1961

NEW

TO RELIEVE SYMPTOMS OF
THE COLD COMPLEX IN CHILDREN—

Coplexen® Liquid

A SINGLE PREPARATION,
SPECIALLY DESIGNED FOR CHILDREN—

NOT ONLY RELIEVES COUGH

NASAL CONGESTION

FEVER

MUSCULAR ACES AND PAINS

BUT ALSO CONTROLS

IRRITABILITY

RESTLESSNESS AND INSOMNIA



SMITH KLINE & FRENCH LABORATORIES

THORAZINE®

brand of chlorpromazine

PRESCRIBING INFORMATION

Tranquilizer • Antiemetic • Potentiator

The wide diversity of clinical applications in which 'Thorazine' is valuable, as either a specific or an adjuvant, is due to its three fundamental clinical properties: (1) its capacity to alleviate anxiety, tension and agitation without dulling mental acuity, (2) its ability to potentiate sedatives, narcotics and anesthetics, and (3) its profound antiemetic effect.

The tranquilizing effect of 'Thorazine' accounts for its usefulness in somatic conditions where emotional stress is a factor, as well as in mental and emotional disturbances *per se*.

INDICATIONS

The value of 'Thorazine' is established in the following conditions:

Moderate to severe mental and emotional disturbances of everyday practice, particularly those disturbances marked by agitation, tension, apprehension, excitement, or anxiety.

Somatic conditions complicated by emotional stress, such as arthritis, tuberculosis, severe tension headaches, gastrointestinal disorders, dermatologic conditions, status asthmaticus and severe asthma.

Hospitalized psychiatric patients, to control agitation, dispel delusions and hallucinations, and at the same time to restore or increase the patient's capacity to respond to psychotherapy.

Nausea, vomiting and hiccups, with dramatic results in severe and refractory cases.

Acute or chronic alcoholism, to control agitation, delirium tremens, and nausea and vomiting.

Cancer, as an adjuvant, to control apprehension, suffering due to pain, and nausea and vomiting.

Intractable pain, to reduce suffering and to potentiate narcotics or sedatives.

Obstetrics, as an adjuvant, to control apprehension, pain, and nausea and vomiting. 'Thorazine' allows a reduction in the amounts of the drugs ordinarily used in obstetrical management, thus lessening the risk of respiratory depression in mother and infant.

Surgery, as an adjuvant to control anxiety and apprehension, pain, and nausea and vomiting; and to reduce by potentiation the amounts of narcotics, sedatives and anesthetics needed.

ADULT DOSAGE AND ADMINISTRATION

Dosage should always be adjusted to the response of the individual and the severity of the condition. It is important to increase dosage until symptoms are controlled or side effects become troublesome.

Mental and Emotional Disturbances of Everyday Practice — Depending on severity, starting oral dosage is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. After a day or two, dosage may be increased by increments of 20 mg. to 50 mg. daily, at semi-weekly intervals (increase should be more gradual in emaciated or senile patients) until achieving maximum clinical response. Continue dosage at this level for at least two weeks; then it can usually be reduced to a maintenance level. A daily dosage of 200 mg. is "average," but in some cases, such as discharged mental patients, daily dosages as high as 800 mg. may be necessary. Starting intramuscular dose is 25 mg. (1 cc.). If necessary, and

if no hypotension occurs, repeat the initial dose in one hour. Subsequent dosages should be oral, starting at 25 mg. to 50 mg. t.i.d.

Somatic Conditions Complicated by Emotional Stress—Starting oral dosage is 10 mg. to 25 mg. t.i.d. or q.i.d. Increase gradually by 10 mg. to 25 mg. increments at semiweekly or weekly intervals. Starting intramuscular dosage is 25 mg. (1 cc.), repeated after one hour if necessary and if no hypotension occurs.

Hospitalized Psychiatric Patients — *Acutely agitated, manic, or disturbed patients:* Starting intramuscular dose is 25 mg. (1 cc.). If no marked hypotension occurs, an additional 25 mg. to 50 mg. injection may be given after one hour. Subsequent intramuscular dosages may be increased gradually over a period of several days — even up to 400 mg. q4-6h in exceptionally severe cases — until the patient is controlled. (In elderly or emaciated patients the dosage should be increased more slowly than in other patients.) Usually the patient becomes quiet and cooperative within 24 to 48 hours after the initial dose, at which time oral doses may gradually be substituted for intramuscular doses (mg. for mg. or higher). Even if control is not complete, oral doses may gradually replace intramuscular doses. During this period, oral dosage should be increased rapidly until the patient is calm. Usually an oral dose of 500 mg. a day is sufficient but, if necessary, the dosage may be gradually increased still further to 2,000 mg. a day or higher. *Less acutely agitated patients:* Starting oral dose is 25 mg. t.i.d. Subsequently, increase the amount gradually until an effective dosage is reached — usually 400 mg. daily is sufficient. *Duration of therapy:* It is important to determine the optimal dosage regimen and to continue treatment long enough for maximum clinical response. Maximum improvement is sometimes not apparent until after weeks or even months of therapy.

Nausea and Vomiting — Starting oral dosage is 10 mg. to 25 mg. q4-6h, p.r.n., and may be increased if necessary. Starting intramuscular dose is 25 mg. (1 cc.). If no hypotension occurs subsequent doses of 25 mg. to 50 mg. q3-4h, p.r.n., may be given until vomiting is checked. Then replace intramuscular administration with oral. Starting rectal dosage is one 100 mg. suppository q6-8h, p.r.n. In some patients, one-half this dose may be sufficient.

Hiccups — Starting oral dosage is 25 mg. to 50 mg. t.i.d. or q.i.d. If after 2-3 days symptoms persist, an intramuscular dosage of 25 mg. to 50 mg. (1-2 cc.) may be used. Use intravenous administration only when symptoms still persist. By slow infusion, 25 mg. to 50 mg. (1-2 cc.) should be administered in 500 cc. to 1,000 cc. of physiologic saline solution, with the patient kept flat in bed. Follow blood pressure closely.

Alcoholism — *Severely agitated patients:* Starting intramuscular dose is 25 mg. to 50 mg. (1-2 cc.). Repeat initial dose if necessary and if no hypotension occurs. Start subsequent oral dosages at 25 mg. to 50 mg. t.i.d. *Agitated but manageable patients:* Starting oral dose is 50 mg., followed by 25 mg. to 50 mg. t.i.d. *Ambulatory patients with withdrawal symptoms or sober chronic alcoholics:* Starting oral dose is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Patients in a stuporous condition should be allowed to sleep off some of the effects of the alcohol before 'Thorazine' is administered.

Cancer and Pain — *Severe pain;* starting intramuscular dosage is 25 mg. (1 cc.) b.i.d. or t.i.d. *Milder pain;* starting oral dosage is 10 mg. t.i.d. or q.i.d., or 25 mg. b.i.d. or t.i.d. Because 'Thorazine' potentiates their action, reduce the dosage of narcotics or sedatives to $\frac{1}{4}$ to $\frac{1}{2}$ of the pre-'Thorazine' level.

Obstetrics — Intramuscular dose in labor and delivery is 12.5 mg. to 25 mg. (0.5-1 cc.), administered when dilation of the cervix reaches 3 to 5 centimeters or when strong labor is established. At the same time (but not mixed in the syringe with 'Thorazine'), $\frac{1}{4}$ to $\frac{1}{2}$ the usual dose of a narcotic or seda-

tive and, if desired, 0.4 mg. of scopolamine may be administered. Depending upon blood pressure, respiration and the general condition of the patient, the initial 'Thorazine' dose (alone or with reduced amounts of the other agents) may be repeated in 3 to 5 hours if necessary.

Surgery (Adults) — *Preoperatively*, oral dose is 25 mg. to 50 mg., 2 to 3 hours before the operation. *Intramuscular dose* is 12.5 mg. to 25 mg. (0.5-1 cc.), 1 to 2 hours before the operation. *During surgery* 'Thorazine' should be administered only if needed to control nausea and vomiting, retching, hiccups, or other acute symptoms. *Intramuscular dose* is 12.5 mg. (0.5 cc.), repeated in $\frac{1}{2}$ hour if necessary and if no hypotension occurs. *Intravenous dose* should be no more than 2 mg. per fractional injection, with injections at not less than 2-minute intervals. Also it should not exceed 25 mg. 'Thorazine' should be diluted to 1 mg./cc. (1 cc. mixed with 24 cc. of physiologic saline solution). *Postoperatively*, oral dosage is 10 mg. to 25 mg. q4-6h, p.r.n. *Intramuscular dosage* is 12.5 mg. to 25 mg. (0.5-1 cc.), repeated in one hour if necessary and if no hypotension occurs.

PEDIATRIC DOSAGE AND ADMINISTRATION

Nausea and Vomiting, Behavior Disorders and Pain — *Oral dosage* is on the basis of $\frac{1}{4}$ mg./lb. of body weight q4-6h, until symptoms are controlled (i.e., for 40 lb. child—10 mg. q4-6h). Calculate 'Thorazine' Syrup, dosage at 10 mg./5 cc. tsp. *Rectal dosage* is on the basis of $\frac{1}{2}$ mg./lb. of body weight q6-8h, p.r.n. (i.e., for 20-30 lb. child—half of a 25 mg. suppository q6-8h). *Intramuscular dosage* is on the basis of $\frac{1}{4}$ mg./lb. of body weight q6-8h, p.r.n. In children up to 5 years (or 50 lbs.)—not over 40 mg./day. In children 5-12 years (or 50-100 lbs.)—not over 75 mg./day.

Pain — Because 'Thorazine' potentiates the action of narcotics and sedatives, reduce the dosage of these agents to $\frac{1}{4}$ to $\frac{1}{2}$ of the pre-'Thorazine' level.

Behavior Disorders — In severe cases, 50-100 mg. daily has been used and, in older children, 200 mg. or more daily may be required.

Surgery (Children) — *Preoperatively*, dose is on the basis of $\frac{1}{4}$ mg./lb. of body weight given either orally 2 to 3 hours before the operation, or intramuscularly 1 to 2 hours before. *During surgery*, the dose is on the basis of $\frac{1}{8}$ mg./lb. of body weight, repeated in $\frac{1}{2}$ hour if necessary and if no hypotension occurs. The intravenous dose should be no more than 1 mg. per fractional injection, with injections at not less than 2-minute intervals. Intravenous dosage during surgery should not exceed recommended intramuscular dosage and should always be diluted to 1 mg./cc. *Postoperatively*, dosage is on the basis of $\frac{1}{4}$ mg./lb. of body weight, either orally q4-6h, p.r.n., or intramuscularly, a single dose repeated in one hour if necessary and if no hypotension occurs.

NOTES ON PARENTERAL ADMINISTRATION

Except for acute ambulatory cases, parenteral administration should generally be reserved for bedfast patients. Parenteral administration should always be made with the patient lying down and remaining so for at least $\frac{1}{2}$ hour afterward because of possible hypotensive effects. The injection should be given slowly, deep into the upper outer quadrant of the buttock. If irritation and pain at the site of injection are problems, dilution of 'Thorazine' Injection with physiologic saline solution or 2% procaine solution may be helpful. Subcutaneous administration is not advisable, and care should be taken to avoid injecting undiluted 'Thorazine' Injection into a vein. Intravenous administration is recommended only for severe hiccups and surgery.

Because contact dermatitis has been reported, avoid getting the solution on hands or clothing.

SIDE EFFECTS

The drowsiness caused by 'Thorazine' may be unwanted in some patients. It is usually mild to moderate and disappears after the first or second week of therapy. If, however, drowsiness is troublesome, it can usually be controlled by lowering the dosage or by administering small amounts of dextroamphetamine.

Other side effects that have been reported occasionally are dryness of the mouth, nasal congestion, some constipation, miosis in a few patients and, very rarely, mydriasis. Mild fever (99°F.) may occur occasionally during the first days of therapy with large intramuscular doses. During 'Thorazine' therapy some patients have an increased appetite and gain weight. Usually these patients reach a plateau beyond which they do not gain further weight.

CAUTIONS

Jaundice: In the more than 14 million patients who have been treated with 'Thorazine' in the United States, the incidence of jaundice—regardless of indication, dosage, or mode of administration—has been low. Few cases have occurred in less than one week or after six weeks. Jaundice due to 'Thorazine' is of the so-called "obstructive" type; is without parenchymal damage; and is usually promptly reversible upon the withdrawal of 'Thorazine'. Because detailed liver function tests of 'Thorazine'-induced jaundice give a picture which mimics extrahepatic obstruction, exploratory laparotomy should be withheld until sufficient studies confirm extrahepatic obstruction.

Agranulocytosis: Agranulocytosis, although rare, has been reported in patients on 'Thorazine' therapy. Patients receiving 'Thorazine' should be observed regularly and asked to report at once the sudden appearance of sore throat or other signs of infection. If white blood counts and differential smears give an indication of cellular depression, the drug should be discontinued, and antibiotic and other suitable therapy should be instituted. Because most reported cases have occurred between the fourth and the tenth weeks of treatment, patients on prolonged therapy should be observed particularly during that period.

A moderate suppression of total white blood cells is sometimes observed in patients on 'Thorazine' therapy. If not accompanied by other symptoms, it is not an indication for discontinuing 'Thorazine'.

Potentiation: 'Thorazine' prolongs and intensifies the action of many central nervous system depressants, such as barbiturates and narcotics. Consequently, it is advisable to stop administration of such depressants before initiating 'Thorazine' therapy. Later the depressant agents may be reinstated, starting with low doses, and increasing according to response. Approximately $\frac{1}{4}$ to $\frac{1}{2}$ the usual dosage of such agents is required when they are given in combination with 'Thorazine'. (However, 'Thorazine' does not potentiate the anticonvulsant action of barbiturates. In patients who are receiving anticonvulsants, the dosage of these agents—including barbiturates—should not be reduced if 'Thorazine' is started. Rather, 'Thorazine' should be started, at a very low dosage and increased, if necessary.)

Hypotensive Effect: Postural hypotension and simple tachycardia may be noted in some patients. In these patients, momentary fainting and some dizziness are characteristic and usually occur shortly after the first parenteral dose, occasionally after a subsequent parenteral dose—very rarely after the first oral dose. In most cases, prompt recovery is spontaneous and all symptoms disappear within $\frac{1}{2}$ to 2 hours with no subsequent ill effects. Occasionally, however, this hypotensive effect may be more severe and prolonged, producing a shock-like condition. In consideration of possible hypotensive effects, the patient

should be kept under observation (preferably lying down) for some time after the initial parenteral dose. If, on rare occasions, hypotension does occur, it can ordinarily be controlled by placing the patient in a recumbent position with head lowered and legs raised. If it is desirable to administer a vasoconstrictor, 'Levophed' and 'Neo-Synephrine'® are the most suitable. Other pressor agents, including epinephrine, are not recommended because phenothiazine derivatives may reverse the usual elevating action of these agents and cause a further lowering of blood pressure.

*'Levophed' and 'Neo-Synephrine' are the trademarks (Reg. U.S. Pat. Off.) of Winthrop Laboratories for its brands of levarterenol and phenylephrine respectively.

Antiemetic Effect: The physician should always bear in mind that the antiemetic effect of 'Thorazine' may mask signs of over-dosage of toxic drugs and may obscure diagnosis of conditions such as intestinal obstruction and brain tumor.

Dermatological Reactions: Dermatological reactions have been reported. Most have been of a mild urticarial type, suggesting allergic origin. Some of them appear to be due to photosensitivity, and it is advisable that patients on 'Thorazine' avoid undue exposure to the summer sun.

Neuromuscular Reactions: With very large doses of 'Thorazine', as frequently used in psychiatric cases over long periods, there have been a few patients who have exhibited neuromuscular reactions (extrapyramidal symptoms) which closely resemble parkinsonism. Such symptoms are reversible and usually disappear within a short time after the dosage has been decreased or the drug withdrawn. These neuromuscular reactions can also be controlled by the concomitant administration of standard anti-parkinsonism agents.

Lactation? Moderate engorgement of the breast with lactation has been observed in female patients receiving very large doses of 'Thorazine'. This, however, is a transitory condition which disappears on reduction of dosage or withdrawal of the drug.

CONTRAINDICATIONS

In comatose states due to central nervous system depressants (alcohol, barbiturates, narcotics, etc.), and also in patients under the influence of large amounts of barbiturates or narcotics.

AVAILABLE

Tablets, 10 mg., 25 mg., 50 mg. and 100 mg., in bottles of 50, 500 and 5000; 200 mg., for use in mental hospitals, in bottles of 500 and 5000. (Each tablet contains chlorpromazine hydrochloride, 10 mg., 25 mg., 50 mg., 100 mg., or 200 mg.)

Ampuls, 1 cc. and 2 cc. (25 mg./cc.), in boxes of 6, 100 and 500. (Each cc. contains, in aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfate, 1 mg.; sodium chloride, 6 mg.)

Multiple-dose Vials, 10 cc. (25 mg./cc.), in boxes of 1, 20 and 100. (Each cc. contains, in aqueous solution, chlorpromazine hydrochloride, 25 mg.; ascorbic acid, 2 mg.; sodium bisulfite, 1 mg.; sodium sulfate, 1 mg.; sodium chloride, 1 mg. Contains benzyl alcohol, 2%, as preservative).

Spansule® capsules, 30 mg., 75 mg., 150 mg. and 200 mg., in bottles of 30, 250 and 1500; also 300 mg., in bottles of 30 and 1500. (Each 'Spansule' capsule contains chlorpromazine hydrochloride, 30 mg., 75 mg., 150 mg., 200 mg., or 300 mg.)

Syrup, 10 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. (Each 5 cc. contains chlorpromazine hydrochloride, 10 mg.)

Suppositories, 25 mg. and 100 mg., in boxes of 6. (Each suppository contains chlorpromazine, 25 mg. or 100 mg.; glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids, lecithin.)

Concentrate (for hospital use), 30 mg./cc., in 4 fl. oz. bottles, packages of 12 and 36; and in 1 gal. bottles. (Each cc. contains chlorpromazine hydrochloride, 30 mg.)

Prescribing information adopted January, 1961

COMPAZINE® brand of prochlorperazine PRESCRIBING INFORMATION

Antiemetic • Tranquilizer

'Compazine' provides a beneficial calming effect and prompt antiemetic action with unusual freedom from drowsiness and depressing effect. Clinical experience in several million patients has shown 'Compazine' to be promptly effective in low dosage, with minimal side effects in the dosage range recommended for everyday practice.

INDICATIONS

1. **Anxiety, tension, agitation**, confusion, insomnia, chronic alcoholism and behavior disorders in children.

2. **Emotional stress associated with somatic conditions** such as g.i. disorders, cardiovascular conditions, hypertension, menopause, premenstrual tension, neurodermatitis, arthritis, asthma, cancer, tuberculosis and tension headache.

3. **Nausea and vomiting of widely varying causes** such as pregnancy, postoperative conditions, viral gastroenteritis and other infectious conditions, irradiation therapy and motion sickness. In most patients, relief is provided within a short time after one oral dose.

4. **In surgery and obstetrics** to prevent or control: (a) nausea, vomiting and retching; and (b) fear, tension and restlessness.

5. **In psychiatry** to control agitation, anxiety, tension and confusion that may be seen in psychotic states.

ADMINISTRATION AND USUAL DOSAGE

Dosage should be determined according to the severity of the condition and the response of the patient. It is important to begin therapy with the lowest recommended dosage. In hospitalized patients or those under adequate supervision, higher doses may be indicated.

USUAL ADULT DOSAGE

Tablets: The usual starting dosage is 5 mg. three or four times daily. Some patients will respond better when subsequent dosage is raised to 10 mg. t.i.d. or q.i.d. Dosage over 40 mg. daily should be used only in resistant cases.

Spansule® sustained release capsules: The usual starting dosage is one 15 mg. 'Spansule' capsule taken upon arising, or one 10 mg. 'Spansule' capsule in the morning and evening. Some patients may subsequently require dosage increased to one 30 mg. capsule in the morning. Dosage over 40 mg. daily should be used only in resistant cases. (B.i.d. dosage of the 30 mg. capsule should be limited to severe cases.)

Dosage recommendations for other oral forms of 'Compazine' may be applied to 'Compazine' Spansule capsules on the basis of the total daily dose in milligrams. (For example: one 15 mg. 'Compazine' Spansule capsule replaces 5 mg. 'Compazine' Tablets, t.i.d.) All strengths have the same duration of action. They differ only in intensity of therapeutic effect.

In "morning sickness" of pregnancy, one 'Compazine' Spansule capsule taken before retiring affords antiemetic activity throughout the night and into the morning, thus protecting against "morning sickness."

The 15 mg. 'Compazine' Spansule capsule is ideal for once-a-

day administration. The 10 mg. 'Compazine' Spansule capsule is ideal for twice-a-day (q12h) administration.

Syrup: 5 mg. to 10 mg. (1 to 2 teaspoonfuls) three or four times daily.

Suppositories: Usual dosage in adults is one 25 mg. 'Compazine' Suppository twice daily.

Injection: Total parenteral dosage in 24 hours should not exceed 40 mg.

For intramuscular administration, an initial dose of 5 mg. to 10 mg. (1 to 2 cc.) of 'Compazine' Injection should be injected deeply into the upper outer quadrant of the buttock. Repeat, if necessary, at intervals of 3 to 4 hours. Pain at the site of injection has not been a problem. **For intravenous administration**, see surgery section. Dilution is not required. **Subcutaneous administration** is not advisable because of local irritation.

It is recommended that 'Compazine' Injection not be mixed with other agents in the syringe.

Dermatitis due to contact with 'Compazine' has not been a problem. However, it is recommended that nurses or others giving frequent injections take precautions to avoid getting the solution on their hands or clothing.

'Compazine' Injection should be protected from light, since exposure may cause discoloration. Slight yellowish discoloration will not significantly alter the potency or therapeutic efficacy. However, if markedly discolored, the solution should be discarded.

IN SURGERY (Adults)

ROUTE	DOSAGE
<i>preoperatively</i>	
Intramuscular injection	5 mg. to 10 mg. (1-2 cc.)
1 to 2 hours before induction of anesthesia. Repeat once in 30 minutes if necessary.	
Intravenous injection	5 mg. to 10 mg. (1-2 cc.)
15 to 30 minutes before induction of anesthesia.	
Intravenous infusion	20 mg. (4 cc.) per liter of isotonic solution
Add to I.V. infusion 15 to 30 minutes before induction. Repeat once if necessary.	

during surgery

Intramuscular or 5 mg. to 10 mg.

Intravenous injection (1-2 cc.)

When needed to control acute symptoms. Repeat once if necessary.

postoperatively

To prevent anxiety, nausea, vomiting, or emergence excitement, add to I.V. infusion: 20 mg. (4 cc.) per liter of isotonic solution.

For immediate control of acute nausea, vomiting, retching, or emergence excitement, inject 5 mg. to 10 mg. (1-2 cc.), I.V. or I.M. Repeat once if necessary.

IN OBSTETRICS

'Compazine' dosage should be adjusted to the individual patient and her condition in accordance with the general use of the drug (i.e., 5 mg. to 10 mg. per dose; 15 mg. to 40 mg. per day). The following dosage suggestions should prove satisfactory for the majority of obstetric patients.

To relieve anxiety or prevent vomiting during the first stage of labor, the usual dosage is 10 mg. of 'Compazine' by intramuscular injection. As labor progresses, or if it is prolonged, subsequent 10 mg. doses may be administered as needed. The total daily dose need rarely exceed 30 mg.

To control postpartum anxiety or nausea and vomiting, the usual total daily dose of 'Compazine' is 15 mg. to 30 mg. administered orally or intramuscularly.

NOTE: 'Compazine' has no clinically significant potentiating effect on narcotics, anesthetics, or sedatives. However, because the 'Compazine' patient is calm and relaxed, it is sometimes possible to produce satisfactory analgesia with less than the customary amounts of these agents. This lack of potentiating effect also minimizes the risk of intensifying or prolonging the effect of residual anesthetics and other depressant agents used in surgery or labor and delivery.

As with intravenous administration of any surgical or obstetric adjuvant, the increased possibility of hypotension should be kept in mind if 'Compazine' is administered by either intravenous injection or infusion.

USUAL CHILDREN'S DOSAGE

It is important always to use the lowest effective dosage, because as dosage is raised the possibility of side effects increases. There have been occasional cases of neuromuscular reactions (extra-pyramidal symptoms) in children. These have been transitory and reversible. 'Compazine' is not recommended for children under 20 lbs.

Nausea and vomiting are usually controlled during the first day of therapy. Therefore more than one day's therapy is seldom necessary.

Weight	Dosage	Not to exceed
20-29 lbs.	2.5 mg. once or twice a day	7.5 mg. per day
30-39 lbs.	2.5 mg. b.i.d. or t.i.d.	10.0 mg. per day
40-85 lbs.	2.5 mg. t.i.d. or 5 mg. b.i.d.	15.0 mg. per day

For behavior disorders, dosage may be increased gradually, if necessary, within the following daily limits:

2 to 6 years of age: Total daily dose should not exceed 20 mg.
6 to 12 years of age: Total daily dose should not exceed 25 mg.

For rapid control of nausea and vomiting or behavior disorders:

Injection: For children under 12 years of age, each dose should be calculated on the basis of 0.06 mg. of 'Compazine' per pound of body weight and should be administered by deep intramuscular injection. For example, a 40-pound child would receive an injection of 2.5 mg. (0.5 cc.). Control is usually obtained with a single dose.

'COMPАЗINE' IN PSYCHIATRY

'Compazine' is indicated for control of agitation, anxiety, tension and confusion that may be seen in such conditions as schizophrenia; manic-depressive states, manic phase; severe personality disorders; involutional psychoses; degenerative conditions; and senile psychoses.

ADULTS

Oral psychiatric dosage: In relatively mild conditions, as may be seen in private psychiatric practice or in outpatient clinics, the suggested starting dosage is 5 mg. t.i.d. or q.i.d. Some patients will respond better when subsequent dosage is

raised to 10 mg. t.i.d. or q.i.d. In moderate to severe conditions, when patients are either hospitalized or under adequate supervision, the suggested starting dosage is 10 mg. t.i.d. or q.i.d. Dosage should be increased gradually until symptoms are controlled or side effects become bothersome. Experience has shown that when dosage is increased gradually (by small increments every two or three days) side effects either do not occur or are easily controlled.

Some patients will obtain satisfactory results on 50 mg. to 75 mg. of 'Compazine' daily. In more severe disturbances, the optimum dosage in most patients is 100 mg. to 150 mg. daily. With oral administration, response ordinarily becomes evident within a day or two. Longer periods of treatment are usually required before maximal improvement is obtained.

I.M. psychiatric dosage: For immediate control of severely disturbed adult patients, an initial dose of 10 mg. to 20 mg. (2-4 cc.) should be injected deeply into the upper outer quadrant of the buttock. If necessary, this dose should be repeated every 2 to 4 hours to gain control of the patient. Patients often respond shortly after the first injection. In resistant cases, the initial dose may be repeated hourly. More than three or four doses are seldom necessary. If, in rare cases, parenteral medication is indicated over a prolonged period, 10 mg. to 20 mg. (2-4 cc.) at 4- to 6-hour intervals is the usual dosage. Pain and irritation at the site of injection have rarely been encountered and some patients have been given the drug intramuscularly for periods of several weeks. After control is achieved by intramuscular administration, most patients can be switched to an oral form of the drug at the same dosage level or higher.

CHILDREN (2 to 12 years)

Oral psychiatric dosage: The suggested children's starting dosage in psychiatry is 2.5 mg. ($\frac{1}{2}$ teaspoonful of syrup) two or three times daily, or 5 mg. (one teaspoonful of syrup or one 5 mg. tablet) twice daily, according to body weight. During the first day, the total daily dose should not exceed 10 mg. Dosage is then increased according to the patient's response. (2.5 mg. and 5 mg. suppositories are also available.)

For ages 2 to 6, the total daily dosage usually does not exceed 20 mg. **For ages 6 to 12,** the total daily dosage usually does not exceed 25 mg. Because extrapyramidal symptoms have been reported in children as well as in adults, it is important to use the lowest effective dosage.

SIDE EFFECTS

In the dosage range recommended for everyday practice, side effects have been infrequent, transitory and usually mild. A few patients may experience a mild drowsiness when first taking 'Compazine'. There may also be occasional cases of dizziness, skin reaction and neuromuscular reactions (extrapyramidal symptoms); rarely, hypotension.

Neuromuscular Reactions

Occasionally, neuromuscular reactions (extrapyramidal symptoms) have been observed with 'Compazine' therapy. It is important, therefore, to use the lowest effective dosage, because as dosage is raised the possibility of these reactions increases.

Motor Restlessness: A few patients on 'Compazine'-particularly those in whom dosage has been raised to higher levels-may experience a transient unpleasant stimulation or jitteriness, characterized by restlessness and insomnia. The dosage of 'Compazine' should not be increased while these side effects are present. Patients should be reassured that such effects are temporary and will disappear spontaneously. In those cases where the symptoms are particularly bothersome, reduction of dosage or the concomitant administration of a sedative may be helpful.

Dystonias: These neuromuscular reactions are seen in a signifi-

cant percentage of hospitalized mental patients on high dosages. The muscles of the face and shoulder girdle may be selectively involved. Symptoms observed have included spasm of the neck muscles, extensor rigidity of back muscles, carpopedal spasm, eyes rolled back, trismus and swallowing difficulty. Despite some similarity to symptoms of serious neurologic disorders, these reactions are usually promptly reversible by discontinuance of 'Compazine' therapy and administration of a sedative such as phenobarbital. The dosage and route of administration should be determined according to the severity of the symptoms. Patients should be reassured that the symptoms are transitory. Depending on the severity of the dystonia, suitable supportive measures, such as maintaining a clear airway and adequate hydration, should be employed. Note: It has been reported that injectable administration of Benadryl® may also be helpful.

Pseudo-parkinsonism: These neuromuscular reactions may resemble the classic parkinsonism syndrome. Treatment should include discontinuance of 'Compazine' therapy and the administration of any standard anti-parkinsonism agent (see PDR). Patients should also be reassured that these symptoms are transitory. Depending on the severity of symptoms, suitable supportive measures, such as maintaining a clear airway and adequate hydration, should be employed.

CAUTIONS

Clinical experience has demonstrated that 'Compazine', a phenothiazine derivative, has a wide margin of safety and that there is little likelihood of blood or liver toxicity. The physician should be aware, however, of their possible occurrence.

The antiemetic action of 'Compazine' may mask signs of overdosage of toxic drugs or may obscure the diagnosis of conditions such as intestinal obstruction and brain tumor.

'Compazine' has no clinically significant potentiating action. However, if depressant agents are used in conjunction with this drug, the possibility of an additive effect should be kept in mind.

CONTRAINdications

'Compazine' is contraindicated in comatose or greatly depressed states due to central nervous system depressants.

AVAILABLE

There is a dosage form of 'Compazine' for every medical need. Tablets, 5 mg. and 10 mg. and, for use in psychiatry, 25 mg., in bottles of 50, 500 and 5000. Each tablet contains 5 mg., 10 mg., or 25 mg. of prochlorperazine as the dimaleate.

'Spansule' capsules, 10 mg., 15 mg. and 30 mg., in bottles of 30, 250 and 1500; and, for use in psychiatry, 75 mg., in bottles of 30 and 1500. Each capsule contains 10 mg., 15 mg., 30 mg., or 75 mg. of prochlorperazine as the dimaleate.

Ampuls, 2 cc. (5 mg./cc.), in boxes of 6, 100 and 500. Each cc. contains, in aqueous solution: 5 mg. prochlorperazine as the ethanedisulfonate, 1 mg. sodium sulfite, 1 mg. sodium bisulfite, 8 mg. sodium phosphate and 12 mg. sodium biphosphate.

Multiple-dose Vials, 10 cc. (5 mg./cc.), in boxes of 1, 20 and 100. Each cc. contains, in aqueous solution: 5 mg. prochlorperazine as the ethanedisulfonate, 5 mg. sodium biphosphate, 12 mg. sodium tartrate, 0.9 mg. of sodium saccharin and 0.75% benzyl alcohol as preservative.

Suppositories, 2½ mg. (for young children), 5 mg. (for older children) and 25 mg. (for adults), in boxes of 6. Each suppository contains: 2½ mg., 5 mg., or 25 mg. of prochlorper-

*Trademark Reg. U.S. Pat. Off.: 'Benadryl' for diphenhydramine hydrochloride, Parke-Davis.

zine with glycerin, glyceryl monopalmitate, glyceryl monostearate, hydrogenated cocoanut oil fatty acids, hydrogenated palm kernel oil fatty acids and lecithin.

Syrup, 5 mg./teaspoonful (5 cc.), in 4 fl. oz. bottles. Each 5 cc. contains 5 mg. of prochlorperazine as the ethanesulfonate.

Concentrate (for hospital use), 10 mg./cc. in 4 fl. oz. bottles, cartons of 12 and 36. Each cc. contains 10 mg. of prochlorperazine as the ethanesulfonate.

Prescribing information also available in *Compazine® Reference Manual, Physicians' Desk Reference*, or from your SK&F representative or your pharmacist.

Prescribing information adopted January 1961.

STELAZINE® brand of trifluoperazine PRESCRIBING INFORMATION

INDICATIONS

In general practice and in psychiatry 'Stelazine' is outstanding among tranquilizers because it relieves anxiety, agitation and tension—without sedation. Nor does it cause euphoria. 'Stelazine' is also effective in relieving anxiety either accompanying or causing somatic conditions. Where anorexia and insomnia are problems, 'Stelazine' usually produces a marked improvement in appetite and sleep patterns.

'Stelazine' provides a fast therapeutic response. On a convenient b.i.d. dosage regimen, many patients who have failed to respond to other agents, or have responded only poorly, are promptly relieved of their symptoms. With symptoms allayed, rapport with the physician is facilitated, and patients are more receptive to counselling or psychotherapy.

In hospitalized psychiatric patients 'Stelazine' produces rapid response in many diagnostic categories. These include acute and chronic schizophrenias, manic-depressive psychoses, involutional psychoses, chronic brain syndrome and mental deficiency.

'Stelazine' can combat psychotic symptoms without causing drowsiness. It can quiet hyperactive patients and activate withdrawn patients, and it has a marked beneficial effect on delusions and hallucinations.

'Stelazine' can rapidly terminate acute psychotic episodes. On the admissions service, intensive 'Stelazine' therapy often results in early discharges.

Also noteworthy is the effectiveness of 'Stelazine' in the treatment of hard-core, chronic and refractory schizophrenics. When administered to a group of such patients, it characteristically produces significant improvement in at least 30% to 40% of them.

ADMINISTRATION AND DOSAGE

Dosage of 'Stelazine' should be adjusted to the needs of the individual.

1. Adult Dosage for Use in Everyday Practice

Usual starting dosage is 1 mg. twice daily. Optimal dosage is 1 mg. or 2 mg. twice daily. In everyday practice it is seldom necessary to exceed 4 mg. daily.

Because of the inherent long action of 'Stelazine', patients may be controlled on convenient b.i.d. administration; some patients, on once-a-day administration.

2. Adult Dosage for Use in Psychiatric Practice
oral (for office patients and outpatients with anxiety): The usual starting dosage is 1 mg. b.i.d. In some cases, a better response is achieved on 2 mg. b.i.d. In the treatment of these patients, it is seldom necessary to exceed 4 mg. a day. (Some patients with more severe disturbances, and discharged mental patients, may require higher dosages.) In some patients, maintenance dosage can be reduced to once-a-day administration.

oral (for patients who are either hospitalized or under adequate supervision): The usual starting dosage is 2 mg. to 5 mg. b.i.d. (Small or emaciated patients should always be started on the lower dosage.)

The majority of patients will show optimum response on 15 mg. or 20 mg. daily, although a few may require 40 mg. a day or more. It is important to give doses that are high enough for long enough periods of time—especially in chronic patients.

Optimum therapeutic dosage levels should be reached within two or three weeks after the start of therapy. When maximum therapeutic response is achieved, dosage may be reduced gradually to a satisfactory maintenance level.

intramuscular (for prompt control of severe symptoms): The usual dosage is 1 mg. to 2 mg. ($\frac{1}{2}$ -1 cc.) by deep intramuscular injection q4-6h, p.r.n. More than 6 mg. within 24 hours is rarely necessary. As soon as a satisfactory response is observed, oral medication should be substituted at the same dosage level or slightly higher.

Only in very exceptional cases should intramuscular dosage exceed 10 mg. within 24 hours. Since 'Stelazine' has a relatively long duration of action, injections should not be given at intervals of less than 4 hours because of the possibility of an excessive cumulative effect.

'Stelazine' Injection has been exceptionally well tolerated; there is little, if any, pain and irritation at the site of injection.

3. Dosage for Psychotic and Mentally Defective Children

The dosages given below apply to children, ages 6 to 12, who are either hospitalized or under adequate supervision.

oral: The starting dosage is 1 mg. administered once a day or b.i.d., depending on the size of the child. Dosage may be increased gradually until symptoms are controlled or until side effects become troublesome. Both the rate and the amount of dosage increases should be carefully adjusted to the size of the child and the severity of the symptoms, and the lowest effective dosage should always be used. Once control is achieved, it is usually possible to reduce dosage to a satisfactory maintenance level.

In most cases, it is not necessary to exceed 15 mg. of 'Stelazine' daily. However, some older children with severe symptoms may require, and be able to tolerate, higher dosages.

intramuscular: There has been little experience with the use of 'Stelazine' Injection in children. However, if it is necessary to achieve rapid control of severe symptoms, 1 mg. ($\frac{1}{2}$ cc.) of 'Stelazine' may be administered intramuscularly once or twice a day, depending on the size of the child. Once control is achieved, usually after the first day, the oral dosage forms of 'Stelazine' should be substituted for the Injection.

SIDE EFFECTS

In the dosage range of 2-4 mg. daily, side effects from 'Stelazine' are infrequent. When they do occur, they are usually slight and transitory. Mild drowsiness occurs in a small per-

centage of patients; this usually disappears after a day or two of 'Stelazine' therapy. There are occasional cases of dizziness, mild skin reaction, dry mouth, insomnia and fatigue; rarely, neuromuscular reactions (extrapyramidal symptoms).

In hospitalized psychiatric patients receiving daily 'Stelazine' dosages of 10 mg. or more, clinical experience has shown that, when side effects occur, their appearance is usually restricted to the first two or three weeks of therapy. After this initial period, they appear infrequently, even in the course of prolonged therapy. Termination of 'Stelazine' therapy because of side effects is rarely necessary.

Side effects observed include dizziness, muscular weakness, extrapyramidal symptoms, anorexia, rash, lactation and blurred vision. Drowsiness has occurred, but has been transient, usually disappearing in a day or two.

Neuromuscular Reactions (extrapyramidal symptoms)

These symptoms are seen in a significant number of hospitalized mental patients receiving 'Stelazine'. They may be characterized by motor restlessness, be of the dystonic type, or they may resemble parkinsonism.

motor restlessness: Some patients may experience an initial transient period of stimulation or jitteriness, chiefly characterized by motor restlessness and sometimes insomnia. These patients should be reassured that this effect is temporary and will disappear spontaneously. The dosage of 'Stelazine' should not be increased while these side effects are present.

If this turbulent phase becomes too troublesome, the symptoms can be controlled by a reduction of dosage or the concomitant administration of phenobarbital or some other barbiturate.

dystonias: These symptoms are rare outside of mental hospitals, but they may be observed occasionally in patients who have received 'Stelazine' as a mild tranquilizer.

Symptoms may include: spasm of the neck muscles, sometimes progressing to torticollis; extensor rigidity of back muscles, sometimes progressing to opisthotonus; carpopedal spasm, trismus, swallowing difficulty, oculogyric crisis and protrusion of the tongue.

The onset of the dystonias may be sudden. A primary characteristic of these symptoms is their intermittency. They may last several minutes, disappear and then recur. There is typically no loss of consciousness and definite prodromata are usually present. Initially, these intermittent symptoms occur in a crescendo of intensity. Then as the effect of the drug wears off, the intervals between the occurrence of symptoms become longer, and the intensity of the symptoms subsides.

Despite their similarity to symptoms of serious neurological disorders, these dystonias are usually promptly reversible and need not cause undue alarm. They usually subside gradually within a few hours, and almost always within 24^h to 48 hours, after the drug has been temporarily discontinued.

Treatment is symptomatic and conservative. In *mild cases*, reassurance of the patient is often sufficient therapy. Barbiturates are also useful. In *moderate cases*, barbiturates will usually bring rapid relief. The dosage and route of administration of the barbiturate used should be determined by the intensity of the symptoms and the response of the patient. In *more severe adult cases*, the administration of an anti-parkinsonism agent produces rapid, often dramatic, reversal of symptoms. Also, intravenous caffeine and sodium benzoate seems to be an effective and rapid antagonist to the dystonias. Depending on the severity of the dystonia, suitable supportive measures, such as maintaining a clear airway and adequate hydration, should be employed. In *children*, reassurance and barbiturates will usually control symptoms. Dosage and route of administration should be

determined according to the intensity of symptoms and response of patient.

Note: It has been reported that injectable administration of 'Benadryl' may also be helpful in controlling dystonias.

pseudo-parkinsonism: These symptoms are extremely rare outside of mental hospitals.

Symptoms include: mask-like facies; drooling; tremors; pill-rolling motion; and shuffling gait.

Reassurance and sedation are important components of effective therapy. In the majority of cases these symptoms are readily reversible when an anti-parkinsonism agent is administered concomitantly with 'Stelazine'. Occasionally it is necessary to lower the dosage or to temporarily discontinue the drug.

CAUTIONS

Clinical experience has demonstrated that 'Stelazine', a phenothiazine derivative, has a wide range of safety and that there is little likelihood of either blood or liver toxicity. The physician should be aware, however, of their possible occurrence.

One of the results of 'Stelazine' therapy may be an increase in mental and physical activity. In some patients, this effect may not be desired. For example, although 'Stelazine' has relieved anxiety and, at the same time, anginal pain in patients with angina pectoris, a few such patients have complained of increased pain while taking 'Stelazine'. Therefore, if 'Stelazine' is used in angina patients, they should be observed carefully and, if an unfavorable response is noted, the drug should be withdrawn.

Hypotension has not been a problem, but nevertheless adequate precautions should be taken when the drug is used in patients with impaired cardiovascular systems.

The antiemetic action of 'Stelazine' may mask signs of overdosage of toxic drugs or may obscure the diagnosis of conditions such as intestinal obstruction and brain tumor.

Although 'Stelazine' has shown very little potentiating activity, caution should be observed when it is used in large doses in conjunction with sedatives or depressants.

CONTRAINDICATIONS

'Stelazine' is contraindicated in comatose or greatly depressed states due to central nervous system depressants.

AVAILABLE

Tablets, 1 mg. and 2 mg., in bottles of 50, 500 and 5000. (Each tablet contains 1 mg. or 2 mg. of trifluoperazine as the dihydrochloride.)

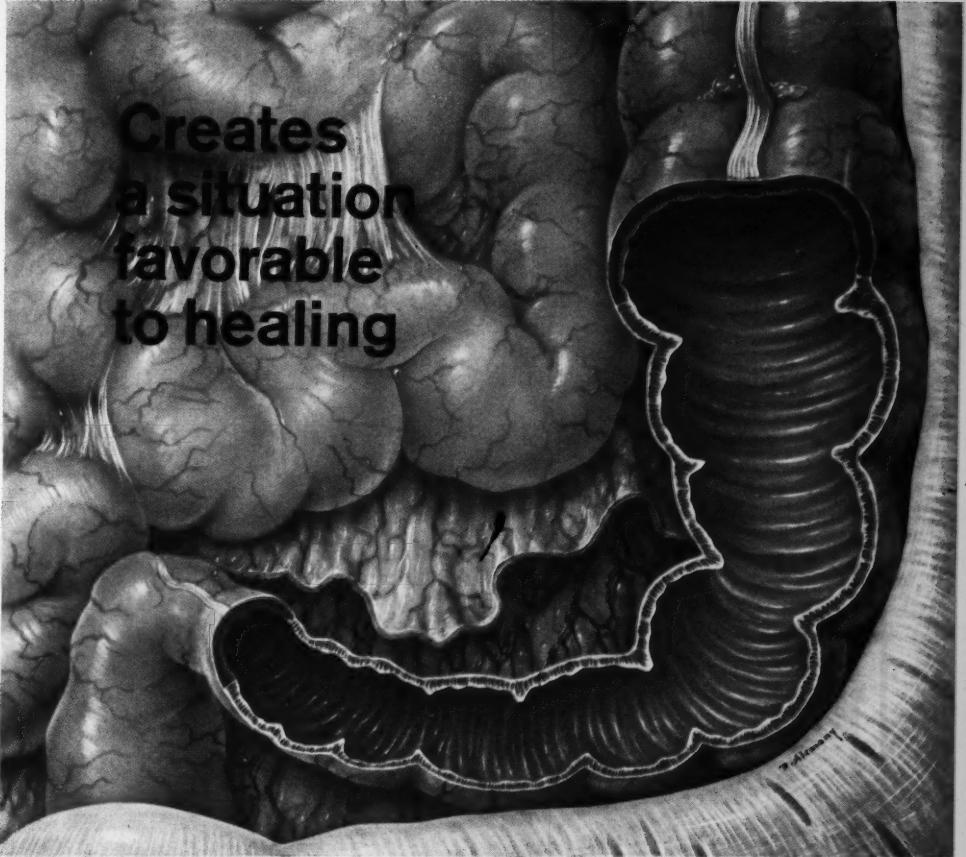
For psychiatric patients who are hospitalized or under close supervision:

Tablets, 5 mg. and 10 mg., in bottles of 50, 1500 and 5000. (Each tablet contains 5 mg. or 10 mg. of trifluoperazine as the dihydrochloride.)

Multiple-dose Vials, 10 cc. (2 mg./cc.), in boxes of 1 and 20. (Each cc. contains, in aqueous solution, 2 mg. of trifluoperazine as the dihydrochloride, 4.75 mg. of sodium tartrate, 11.6 mg. of sodium biphosphate, 0.3 mg. of sodium saccharin, and 0.75% of benzyl alcohol as preservative.)

Concentrate (for hospital use), 10 mg./cc., in 2 fl. oz. bottles, in cartons of 4 and 12. (Each cc. contains 10 mg. of trifluoperazine as the dihydrochloride.)

Prescribing information adopted Jan. 1961



**Creates
a situation
favorable
to healing**

In Spastic Colon: 'Combid' *Spansule* capsules relieve psychic as well as physical factors. Anxiety and tension—the usual causes of spastic colon—are controlled. At the same time, spasm is relieved in the colon itself.

The usual 'Combid' regimen: one dose q12h.

SK & F Combid® Spansule®

brand of sustained release capsules

PRESCRIBING INFORMATION:

'Combid' *Spansule* capsules are a logical combination of 5 mg. of Darbid® (brand of isopropamide) as the iodide, a unique, inherently long-acting anticholinergic; and 10 mg. of Compazine® (brand of prochlorperazine) as the dimaleate, the outstanding tranquilizer/antiemetic, in sustained release form.

Among the many conditions in which 'Combid' *Spansule* capsules are indicated are: peptic ulcer, hyperchlorhydria, pyloroduodenal irritability, irritable or spastic colon, gastric neurosis, gastritis, aerophagia, pyrosis, "nervous stomach," functional diarrhea, drug-induced diarrhea, mucous colitis, ulcerative colitis, genitourinary spasm, and nausea and vomiting of pregnancy.

ADMINISTRATION AND DOSAGE: One 'Combid' *Spansule* capsule b.i.d. (every 12 hours). Some patients may require only one capsule every 24 hours, on arising. Only in the exceptional patient will it be necessary to increase the dosage to two capsules b.i.d. (morning and evening).

CONTRAINDICATIONS: As is true with any preparation containing an anticholinergic, 'Combid' *Spansule* capsules should not be prescribed for patients with glaucoma, pyloric obstruction, or prostatic hypertrophy. Also, because of the antiemetic action of the 'Compazine' component (a phenothiazine derivative), 'Combid' *Spansule* capsules should not be used where nausea and vomiting are believed to be a manifestation of intestinal obstruction or brain tumor.

Clinical experience has demonstrated that 'Combid' has a wide margin of safety and that there is little likelihood of blood or liver toxicity or neuromuscular reactions (extra-pyramidal symptoms). The physician should be aware, however, of their possible occurrence. When 'Combid' is used with depressant drugs, the possibility of an additive effect should be borne in mind. An occasional patient may experience mild drowsiness when first taking 'Combid'. Prescribing information adopted January 1961.